

SERVICE DATE
Jun 26, 2019

PSC REF#: 370599

Public Service Commission of Wisconsin
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PUBLIC SERVICE COMMISSION OF WISCONSIN

2019-2023 Focus on Energy Evaluation Contract

9501-FE-124

FINAL DECISION

This is the Final Decision awarding the Public Service Commission of Wisconsin's (Commission) 2019-2022 Focus on Energy evaluation contract to The Cadmus Group, LLC (Cadmus), and approving a contract between the Commission and Cadmus.

Introduction

Wisconsin Stat. § 196.374(3)(d) requires the Commission to “contract with one or more independent auditors to prepare a...performance audit of Focus on Energy (Focus) programs that “evaluate[s] the programs and measure[s] the performance of the programs against the goals and targets set by the Commission.” This statutory requirement reflects a standard practice nationwide to require independent verification of the energy savings and cost-effectiveness results claimed by energy efficiency and renewable resource programs. Evaluation contractors in Wisconsin and nationwide also more broadly support continuous program improvement through other analysis work, such as calculating the economic and environmental impacts of program activities and assessing customer satisfaction.

Since 2011, the Commission has contracted with Cadmus to provide evaluation services under this statutory requirement. The Commission last issued a Request for Proposal (RFP) for evaluation services on May 27, 2011 ([PSC REF#: 147278](#)), selected Cadmus as the winning bidder, and signed a contract to provide evaluation services during the 2011-14 quadrennial

period. On December 23, 2014, the Commission extended Cadmus' contract to provide evaluation services for the 2015-18 quadrennial period. ([PSC REF#: 226629.](#))

On March 26, 2019, the Commission issued an RFP for Focus evaluation services during the 2019-2022 quadrennial period. The Commission received five proposals in response to the RFP. A Review committee including Commission staff and other members of the Commission-created Evaluation Work Group, reviewed the proposals and recommended awarding the 2019-2022 contract to Cadmus. Commission staff and Cadmus representatives subsequently negotiated a draft contract, including an overall contract budget, for Commission approval.

Findings of Fact

1. It is reasonable for the Commission to award Cadmus the 2019-2022 contract for Focus evaluation services.
2. It is reasonable for the Commission to approve the contract with Cadmus presented for review. ([PSC REF#: 369913.](#))

Conclusions of Law

1. The Commission is required under Wis. Stat. § 196.374(3)(d) to contract with an independent organization to evaluate the performance of Focus programs.
2. The Commission may impose any term, condition, or requirement necessary to protect the public interest pursuant to Wis. Stat. §§ 196.02, 196.374, and 196.395.

Opinion

Each of the five members of the evaluation RFP committee independently reviewed the five proposals submitted in response to the Commission's RFP. Reviewers assigned scores for each bidder's proposal based on the bidder's background and experience with energy efficiency

evaluation; staffing plans for the Focus project; and the proposal's plans for meeting the objectives of the contract, communicating results accurately and collaboratively, setting priorities among different evaluation activities, and assessing future savings potential. The Commission's procurement manager assigned additional points for each bidder's cost proposal, with the lowest-cost bidder receiving the maximum available points and other bidders receiving points based on the magnitude of the difference between their proposal and the lowest-cost proposals.

After completing independent scoring and discussing the results as a group, all five reviewers unanimously recommended awarding the evaluation contract to Cadmus. Based on average scores from the five committee members, Cadmus received a total score of 817 out of 900 points, while all other bidders received less than 740 points. These results reflected that Cadmus submitted the lowest-cost proposal and received the highest overall score on other requirements from all five committee members. Cadmus' proposal used several examples of Focus-level evaluation analysis and reporting that demonstrated that Cadmus could meet the needs and expectations of the Commission and the Evaluation Work Group. Cadmus' proposal also incorporated new ideas to continue to improve evaluation effectiveness and efficiency, and to address Focus program developments that will require new and updated evaluation approaches.

Commission staff subsequently developed a draft contract in negotiation with Cadmus. To develop the contract, Commission staff updated the content of the 2015-18 contract to reflect the 2019-2022 scope of work outlined in the RFP. The contract also incorporates new provisions from the 2019-2022 program administration contract, approved by the Commission in 2018, that are also relevant to evaluator duties, including enhanced cybersecurity requirements. Cadmus

accepted the general modifications to the contract, and requested clarifications and wording revisions to certain contract provisions that Commission staff found acceptable.

The contract also incorporates Cadmus' proposed contract budget of \$12.5 million over the four-year contract period. This budget reflects a reduction from the \$13.8 million final budget for Cadmus' 2015-18 contract, driven by the integration of rural program evaluation into standard program evaluation budgets; reduced costs for conducting a potential study relative to the budget for Cadmus' 2016-17 study; and the continuation of cost-efficiencies Cadmus has achieved in recent years, such as more efficient data management approaches. The contract specifies an "initial project budget" that allocates the overall contract budget by task and calendar year. The contract also establishes that Commission staff and Cadmus staff shall review those initial allocations as they develop detailed annual plans to specify evaluation tasks, and modify allocations with Commission staff approval. Commission staff expect that the allocations in the current budget will be modified multiple times throughout the contract period, as ongoing planning processes refine evaluation priorities, and adjustments are made in response to evolving Focus program needs.

Order

1. The Commission awards the 2019-2022 Focus evaluation contract group to Cadmus.
2. The Commission approves the contract terms negotiated between Commission staff and Cadmus, including a total contract budget of \$12.5 million.

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3. Jurisdiction is retained.

Dated at Madison, Wisconsin, the 26th day of June, 2019.

By the Commission:

A handwritten signature in black ink, reading "Steffany Powell Coker". The signature is written in a cursive, flowing style.

Steffany Powell Coker
Secretary to the Commission

SP:JF:kle DL:01688875

See attached Notice of Rights

PUBLIC SERVICE COMMISSION OF WISCONSIN
4822 Madison Yards Way
P.O. Box 7854
Madison, Wisconsin 53707-7854

**NOTICE OF RIGHTS FOR REHEARING OR JUDICIAL REVIEW, THE
TIMES ALLOWED FOR EACH, AND THE IDENTIFICATION OF THE
PARTY TO BE NAMED AS RESPONDENT**

The following notice is served on you as part of the Commission's written decision. This general notice is for the purpose of ensuring compliance with Wis. Stat. § 227.48(2), and does not constitute a conclusion or admission that any particular party or person is necessarily aggrieved or that any particular decision or order is final or judicially reviewable.

PETITION FOR REHEARING

If this decision is an order following a contested case proceeding as defined in Wis. Stat. § 227.01(3), a person aggrieved by the decision has a right to petition the Commission for rehearing within 20 days of the date of service of this decision, as provided in Wis. Stat. § 227.49. The date of service is shown on the first page. If there is no date on the first page, the date of service is shown immediately above the signature line. The petition for rehearing must be filed with the Public Service Commission of Wisconsin and served on the parties. An appeal of this decision may also be taken directly to circuit court through the filing of a petition for judicial review. It is not necessary to first petition for rehearing.

PETITION FOR JUDICIAL REVIEW

A person aggrieved by this decision has a right to petition for judicial review as provided in Wis. Stat. § 227.53. In a contested case, the petition must be filed in circuit court and served upon the Public Service Commission of Wisconsin within 30 days of the date of service of this decision if there has been no petition for rehearing. If a timely petition for rehearing has been filed, the petition for judicial review must be filed within 30 days of the date of service of the order finally disposing of the petition for rehearing, or within 30 days after the final disposition of the petition for rehearing by operation of law pursuant to Wis. Stat. § 227.49(5), whichever is sooner. If an *untimely* petition for rehearing is filed, the 30-day period to petition for judicial review commences the date the Commission serves its original decision.¹ The Public Service Commission of Wisconsin must be named as respondent in the petition for judicial review.

If this decision is an order denying rehearing, a person aggrieved who wishes to appeal must seek judicial review rather than rehearing. A second petition for rehearing is not permitted.

Revised: March 27, 2013

¹ See *Currier v. Wisconsin Dep't of Revenue*, 2006 WI App 12, 288 Wis. 2d 693, 709 N.W.2d 520.

**Contract for Services Between
The Public Service Commission of Wisconsin
And
The Cadmus Group LLC
Contract Number 9501-FE-124
For the Period June 12, 2019 through June 30, 2023**

This agreement made and entered into on the following contract date, by and between the State of Wisconsin, hereinafter called the "State" and represented by its Public Service Commission, hereinafter called the "Commission," and the following described individual(s) or company, hereinafter called the "Contractor" who agree as follows:

The Commission, having the authority, engages the Contractor to furnish certain professional services in connection with the following described program or project.

The Contractor agrees to furnish the Commission with the described professional services. In consideration of their agreement, the above parties agree to the following conditions as described in this contract.

Contract Name: Focus on Energy Evaluation

Contractor's Name: The Cadmus Group LLC

Contractor's Address: 100 5th Avenue, Suite 100, Waltham, MA 02451

And

625 N Segoe Rd. #107, Madison, WI 53705

In the presence of:



Rebecca Cameron Valcq

Chair, Public Service Commission of Wisconsin



Terry Fry

Senior Vice President, Cadmus Group

1. Scope of Work

The Contractor shall furnish all necessary personnel, labor, office space, equipment, materials, services, licenses, transportation, and other necessary resources (except as is otherwise provided herein) to accomplish the Scope of Work as set forth in Attachment A. Changes to the Scope of Work may only be made by written amendment to Attachment A, signed by both the Contractor and the Commission. The Contractor has established and will maintain, during the term of this Agreement, an office in the Madison, Wisconsin area.

2. Standards of Performance

The Contractor shall perform the Work consistent with the requirements established in this Agreement, any and all applicable professional standards, and to the reasonable satisfaction of the Commission. Unless otherwise directed or permitted by the Commission, the Program Administrator shall perform the required Work consistent with this Agreement, and shall follow the requirements outlined in the Policies and Procedures Manual.

Contractor shall cause all arrangements and agreements with Subcontractors (including without limitation agents) utilized by Contractor pursuant to this Agreement to include protections substantially the same as those afforded to the Commission under or in connection with this Agreement, including without limitation provisions related to confidentiality of information.

3. Funds Payable

The Contractor shall be compensated for reasonable and appropriate services provided and expenses incurred in order to perform the work set forth in this contract. While conducting business on behalf of any other organization than the Focus on Energy Program, the Contractor and its subcontractors shall ensure that their time, travel, and any other costs are not billed to the Focus on Energy Program.

Contact information for invoicing and related receipts is located in Attachment C.

Total compensation shall not exceed \$12,500,000. Detailed payment provisions are specified in Attachment B which is incorporated hereto.

4. Terms of Agreement

The term of this Agreement begins June 12, 2019 and shall end on June 30, 2023, unless amended or terminated earlier in accordance with the provisions of this Agreement.

The Commission may propose to extend this Agreement for up to forty-eight (48) additional months after the end of the initial term by giving written notice thereof to the Program Administrator by September 1, 2022, which notice shall specify the length of the proposed extension and the proposed compensation for the Work to be performed during the extended term. The Contractor shall provide a written response to the Commission's proposal to extend the term of this Agreement, either by accepting or rejecting the proposal, or accepting subject to the parties reaching agreement on compensation, by October 15, 2022. The Contractor's failure to respond by October 15, 2022, shall be deemed a rejection of the proposal to extend the Agreement's term. If the Contractor accepts the proposal subject to the parties reaching agreement on compensation,

compensation for the Work to be provided pursuant to any extension of the term of this Agreement must be agreed upon in writing between the Contractor and the Commission by November 15, 2022, or the proposal to extend shall be deemed rejected.

If the Commission or the Contractor chooses not to extend this Agreement per the above paragraph, or the Commission or the Contractor are unable to agree in writing as to the compensation for the Work to be performed during the extended term by November 15, 2022, then this Agreement shall expire on June 30, 2023.

5. Amendment

Neither this Agreement, nor any amendment to it, is binding on either party unless it has been approved by the Commission. No changes, modifications, amendments or extensions in the terms or conditions of this Agreement shall be effective unless reduced to writing and signed by authorized representatives of the Contractor and the Commission.

6. Termination of Agreement

a. Termination at Will

The Commission reserves the right to terminate this Agreement at any time, for any reason, or no stated reason, by a written notice to the Contractor not less than sixty (60) days in advance of termination. Upon any such termination, the Commission's liability shall be limited to the undisputed, actual costs incurred by the Contractor in carrying out the Work prior to the date of the termination plus any reasonable termination expenses. Termination expenses for which reimbursement may be appropriate are those expenses having prior written approval of the Commission, and may include reasonable and necessary expenses relating to concluding outstanding obligations under the Agreement such as completing administrative duties. Reimbursable termination expenses shall not include, without limitation, legal fees, costs or expenses incurred in disputing or litigating any claims arising from or relating to this Agreement or its termination or any alleged breach of the Agreement.

The Contractor may request, in writing, to terminate this Agreement. At its discretion, the Commission may approve any such termination request. If the termination request is approved, the Commission and the Contractor shall mutually agree upon the termination date.

b. Termination for Cause

The Commission may terminate this Agreement if, through any cause, the Contractor fails to fulfill its material obligations hereunder in a timely and proper manner, or violates any of the material provisions of this Agreement. The Commission shall give the Contractor thirty (30) days' written notice of its intent to terminate under this provision (provided that if the basis for the notice is a material or repeated failure or breach, the Commission may terminate upon written notice). The Commission shall in any such written notice identify the grounds for proposed termination and grant the Contractor a reasonable opportunity to respond which shall not be less than five (5) business days (provided that if the proposed termination is based on a material or repeated failure or breach, the Commission shall not be required to allow a right to respond). Upon termination under this provision, the Commission's liability to the Program

Administrator shall be limited to the actual costs the Contractor has incurred in carrying out the Work as of the date of termination.

c. Termination – Inadequate Appropriations

The Commission reserves the right to terminate this Agreement in whole or in part without penalty due to non-appropriate of necessary funds by the Legislature.

7. Notifications Required under this Agreement

Liaison with the Commission shall be through the Commission's designated representative who shall represent the Commission's interest in review of quality, quantity, rate of progress, and timeliness of services and related considerations as outlined in the contract. Correspondence and transmittals of formal notifications, requests, reports or other documents concerning this Agreement, to be effective, shall be addressed to the Commission's designated representative as defined in Attachment C.

8. Reporting Requirements

Reporting Requirements are specified in the Scope of Work, Attachment A.

9. Sublet or Assignment of Agreement

The contractor shall NOT sublet or assign all or any part of the work under this agreement without prior written approval of the Commission contract representative. The Commission reserves the right to reject any subcontractor after notification.

10. Nondiscrimination/Affirmative Action

In connection with the performance of work under this contractor, the Contractor agrees not to discriminate against any employee or applicant for employment because of age, race, religion, color, handicap, sex, physical condition, developmental disability as defined in s. 51.01(5), Wis. Stat., sexual orientation as defined in s. 111.32(13m), Wis. Stats., or national origin. This provision shall include, but not be limited to, the following: employment; upgrading; demotion or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. Except with respect to sexual orientation, the Contractor further agrees to take affirmative action to ensure equal employment opportunities.

Contracts estimated to be over fifty thousand dollars (\$50,000) require the submission of a written affirmative action plan by the Contractor. An exemption occurs from this requirement if the Contractor has a workforce of less than fifty (50) employees. Within fifteen (15) working days after the Contract is awarded, the Contractor must submit the plan to the Commission for approval. Instructions on preparing the plan and technical assistance regarding this clause are available from the contracting state agency.

The Contractor agrees to post in conspicuous places, available for employees and applicants for employment, a notice to be provided by the contracting state agency that sets forth the provisions of the State of Wisconsin's nondiscrimination law.

Failure to comply with the conditions of this clause may result in the Contractor's becoming declared an "ineligible" contractor, termination of the contract, or withholding of payment.

11. Legal Relations and Indemnification

The Contractor shall at all times comply with and observe all federal and state laws, rules, regulations and published circulars, all Commission and court orders, and all local laws, ordinances, rules and regulations which are in effect during the period of this Agreement and which in any manner affect the Scope of Work or the Contractor's performance of this Agreement.

The Contractor shall, to the extent of Contractor's negligence and/or fault, indemnify and hold harmless the State and all of its officers, agents and employees from (i) all suits, actions, and claims of any character brought for or on account of any injuries or damages received by any persons or property resulting from the operations of the Contractor, or any of its employees, agents, or subcontractors, in or in connection with performing Work under this Agreement, and (ii) reasonable attorneys' fees and legal expenses incurred in defending against such suits, actions and claims.

The Contractor shall, to the extent of Contractor's negligence and/or fault, indemnify and hold harmless the State from (i) all suits, actions and claims of any character brought for or on account of any obligations arising out of agreements between the Contractor and its subcontractors to perform services or otherwise supply products or services, and reasonable attorneys' fees and legal expenses incurred in defending against such suits, actions and claims, and (ii) any and all audit disallowances related to the allocation of administrative costs under this Agreement or the performance of this Agreement, irrespective of whether the audit is ordered by federal or state agencies or by a court or otherwise.

The Contractor shall, to the extent of Contractor's negligence and/or fault, indemnify, and hold harmless the Indemnified Parties from any and all claims, demands, suits, liabilities and expenses (including without limitation reasonable attorneys' fees and legal expenses) by reason of injury to or death of any agent or employee of the Program Administrator or any of its Subcontractors or Implementers of any tier while or in connection with performing Work under this Agreement, including without limitation claims, demands and actions founded upon or growing out of the claim or assertion that any Indemnified Party did not furnish or afford at its premises a safe place of Work or employment or requisite statutory safety in a public building, or were otherwise either solely or jointly negligent; the Contractor further agrees to perform the Work in accordance with applicable safety laws, regulations, ordinances, orders and rules and agrees, to the extent of Contractor's negligence and/or fault, to indemnify and hold harmless the State and its officers, agents, and employees from any and all civil penalties which may be assessed for violations of the Occupational Safety and Health Act of 1970, as amended, or any standards, rules or orders promulgated thereunder, or regulations prescribed pursuant thereto, where such violations exist either solely or partially by reason of any acts or omissions of the Contractor, its officers, agents or employees or its subcontractors of any tier.

The Contractor shall, to the extent of Contractor's negligence and/or fault, indemnify and hold harmless the Commission from and against any fraud, theft, stealing, diverting, embezzling, unlawful taking, unlawful distribution, computer fraud, forgery, voluntary parting, funds transfer

fraud or misappropriation of funds by the Contractor or its agents, employees, affiliates, and/or subcontractors.

12. Failure to Perform

The Commission reserves the right to suspend payment of funds if required plans and reports are not provided to the Commission on a timely basis or if performance of contracted activities is not evidenced and such failure continues unremedied for a period of 30 days after written notice. The Commission further reserves the right to suspend payment of funds upon if there are deficiencies related to required plans and reports or performance of contracted activities and such failure continues unremedied for a period of 30 days after written notice. Following the aforementioned notice period of 30 days, the Commission may suspend any payment for failure to adequately perform any obligation under the Agreement whether or not the payment relates to that obligation.

13. Present and Future Conflict of Interest

The Contractor, its employees and its subcontractors may engage in business activities, other than those described directly below, as long as these activities do not create a conflict of interest with the performance of the Scope of Work. The Contractor also (i) affirms that it, its employees and its subcontractors shall promptly and fully inform the Commission of any business activities and/or relationships which any person or entity, fully acquainted with the circumstances, could reasonably conclude might unfairly advantage the Contractor, employee, or Subcontractor(s), and (ii) agrees that the Contractor, its employees and its subcontractors shall abide by the Commission's reasonable determination as to whether such activities or relationships fall within the terms of this Paragraph. The Contractor agrees, and agrees to obligate its employees and subcontractors, to discontinue any activity which the Commission determines to constitute a conflict of interest.

The Contractor affirms that neither it, nor any of its employees, Subcontractors or Implementers, has or presently expects to have or enter into any beneficial, contractual or business relationship with the Program Administrator, the Commission, the Compliance Agent or the Fiscal Agent that would constitute a conflict of interest with its role as evaluation contractor. The Contractor further affirms that it and its employees and subcontractors shall not develop, pursue, or confirm any such beneficial, contractual, or business relationship with any of the above-mentioned persons or entities at any time during the term of this Agreement, or for 6 months thereafter, without the prior written permission of the Commission.

14. Records Available for Audit and Inspection

The Contractor shall maintain, and shall cause each of its subcontractors to maintain, accurate and complete records, books, documents, payroll papers, accounting records and materials, invoices, receipts, copies of contracts with subcontractors, and other evidence pertaining or relating to the Scope of Work, and all transactions related thereto, or to the costs it incurs under this Agreement (collectively, and whether in tangible, digital or electronic form, the "Records"), with all such Records to be maintained in accordance with Generally Accepted Accounting Principles consistently applied, and to be retained by the Contractor and its subcontractors throughout the term of this Agreement and for six (6) years following its termination or expiration. The Contractor shall make, and shall cause each of its subcontractors to make, all such Records available upon

request at reasonable times and from time to time during the term of this Agreement and for six (6) years thereafter for inspection and audit by the Commission, the Compliance Agent, the Fiscal Agent or any of their respective authorized representatives or agents. If any litigation, claim, or audit begins on or before the date that is six (6) years after this Agreement terminates or expires but is not concluded by such date, the Records shall be retained by the Contractor and its subcontractors until all litigation, claims or audit findings involving the Records have been resolved. The Contractor shall include in all of its subcontracts a provision that states that the records of the subcontractors related to the Work shall be subject to audit and examination during the term of this Agreement and for a period of six (6) years thereafter. These provisions shall also apply in the event of termination of this Agreement for any reason.

The Contractor shall notify the Commission in writing of any planned conversion or destruction of any Records at least 90 days prior to such action, but the Contractor may not convert or destroy any Records it is required to maintain and retain hereunder. Any charges for copies provided by the Contractor of books, papers, computer files, computer printouts or other Records pursuant to this section shall not exceed the actual cost thereof to the Contractor and shall be reimbursed by the Fiscal Agent.

The Contractor shall cooperate fully, and cause each of its Subcontractors and Implementers to cooperate fully, in all inspections and audits, including without limitation by making their respective personnel available for questioning by the auditor(s).

The Records to be maintained and retained by the Contractor and its subcontractors must include the following, without limitation, and without limiting the obligations of the Program Administrator and its Subcontractors and Implementers under this section:

- Documentation of employee time and billing rates;
- Documentation of all equipment, materials, and supplies billed to Focus on Energy, if any;
- Inventory records and supporting documentation for allowable equipment purchased, if any, to carry out the Work;
- Rationale supporting allocation of space charges, if any;
- Rationale and documentation of indirect costs, if any;
- Documentation of services and materials used in the Work and billed to Focus on Energy;
- Documentation establishing that the Contractor and its subcontractors have submitted all reports, and delivered all other deliverables, that are required to be submitted or delivered by them pursuant to this Agreement, as well as the dates on which those reports were due and when they were submitted, and the dates on which those deliverables were due and when they were delivered;
- For each item, report, subcontractor, event or thing with respect to which the Contractor is required under this Agreement to obtain the approval of the Commission, documentation establishing that such approval has been obtained, and when it was obtained; and
- Any and all other Records which support charges to project funds or which relate to the performance of the Work or any transaction related thereto. The Program Administrator must maintain sufficient segregation of Work-related Records from other projects or programs.

15. Legislative Testimony and Communication with Other Stakeholders

The Contractor and any subcontractor may provide legislative testimony or other information to legislators or legislative committees on energy efficiency and renewable energy issues in its capacity as the Contractor or subcontractor for the Focus on Energy Program. The Contractor or subcontractor may also provide legislative testimony or other information to legislators or legislative committees on energy efficiency, renewable energy and other issues on behalf of its own organization or, upon request, on behalf of the Commission. In order to prevent confusion regarding whether legislative testimony or information is being presented on behalf of the Focus on Energy Program or on behalf of the its own organization or the Commission, the parties agree to the following guidelines:

- a. Whenever the Contractor or a subcontractor is requested to provide legislative testimony or other information to legislators or legislative committees in its capacity as the Focus on Energy Program Evaluation Contractor, it shall notify the Commission. This notification shall include the name of the Committee or legislator requesting the testimony or information, the date and time the testimony is scheduled, and the specific topic to be discussed. No testimony shall be provided by the Contractor or subcontractor related to the Focus on Energy Program prior to receiving approval from the Commission. Following the hearing, the Contractor or subcontractor shall provide the Commission with a copy of any written materials specifically developed for, and handed out at, any appearance;

- b. Any person testifying at the legislature or providing other information to legislators or legislative committees on behalf of the Focus on Energy Program or on behalf of his/her own organization, shall state on the record at the beginning of his/her testimony which entity he/she is representing;
- c. Any person testifying at the legislature or providing other information to legislators or legislative committees on behalf of the Focus on Energy Program shall not provide testimony or information that would, in the reasonable judgment of the Commission, diminish the Focus on Energy program's effectiveness unless such testimony is required by operation of law; and
- d. Whenever the Contractor or subcontractor requested to provide information in its capacity as the Focus on Energy Program Evaluation Contractor by utility staff, intervenors or other stakeholders participating in rate cases, or other issues which require a Commission decision and order, they shall first notify the Commission. This notification shall include the name of the person and the organization for which he/she works and the nature of the topic to be discussed.

16. Ownership of Data, Records and Intellectual Property; Confidentiality

a. Work Product

All products of the Contractor and its subcontractors' work, including without limitation, data, records originated, developed or prepared by the Contractor or its subcontractors, or originated, developed or prepared jointly by the contractor, subcontractor(s), and/or the Commission or its agents pursuant to this Agreement, including but not limited to papers,

outlines, drawings, sketches, art work, plans, photographs, specifications, estimates, reports, charts, surveys, survey results, computer databases and spreadsheets or similar documentation, and any work product determined by the Commission to be necessary to the success of the Programs approved for implementation by the Commission, shall be delivered to and are and shall be the sole property of the Commission.

Notwithstanding any other language in this Agreement to the contrary, all pre-existing Contractor intellectual property, confidential and proprietary material, provided that it has been identified in advance in writing as such with reasonable particularity, shall remain the sole property of Contractor, and nothing in this Agreement shall be construed as giving the Commission any right or form of ownership to such intellectual property or confidential or proprietary material.

b. Equipment and Materials Purchased Under This Agreement

Title to equipment or materials purchased directly with funds provided under this Agreement (if any) shall vest in the Commission's name, unless otherwise specified by an amendment to this Agreement. Disposition of any such equipment or materials shall be in accordance with applicable State of Wisconsin property disposal procedures, unless otherwise specified by an amendment to this Agreement.

c. Research Reports or Similar Publications

When requested by the Commission, any research report, conference presentation, journal paper or similar other publication prepared or released in written form by the Contractor or any of its subcontractors that identifies the Commission or relies on data acquired under performance of this Agreement, may be reviewed by the Commission prior to release. In such a case, no publication shall be released unless approved in writing by the Commission. The Commission shall not unreasonably withhold or delay approval. Timely review of the reports by the Commission is essential for the smooth continuation of the Work.

d. Surviving Expiration or Termination of This Agreement

The terms of this section shall continue in effect during the term of this Agreement and for a period of two (2) years after the expiration or termination of this Agreement.

17. Confidentiality

Confidential information refers to (1) program participant-specific information and databases comprised of such information, and (2) any information provided or made available by one party (a "disclosing party") to the other party (a "receiving party") that (a) is marked as proprietary or confidential at the time of disclosure; or (b) is orally identified as being confidential at the time of disclosure, followed by written confirmation of confidentiality within 30 days of such verbal identification; or (c) the receiving party knew or should have known, under the circumstances, was considered confidential or proprietary by the disclosing party.

Each party shall keep confidential and, except for the purpose of fulfilling its obligations under or exercising its rights under this Agreement, shall not disclose to any third party or use for its own benefit or for the benefit of any third party, any Confidential Information of the other party. Each party as receiving party shall limit access to Confidential Information of the disclosing party to

those of its employees or agents who have a need to know such Confidential Information in order to perform the receiving party's obligations under this Agreement, and who are under a duty of confidentiality at least as restrictive as the confidentiality obligations set forth in this Agreement. The obligations set forth in this Paragraph shall survive any termination or expiration of this Agreement.

The above confidentiality obligations in Paragraph 19.5.1 shall not apply to information requested by the Commission provided that the Commission affords the disclosed information confidential protection to the extent allowed by law. The above confidentiality obligations shall also not apply to information which (a) is or becomes generally known or available through no act or failure to act by the receiving party; (b) is already known by the receiving party at the time of receipt from the disclosing party hereunder as evidenced by its records; (c) is furnished to the receiving party by a third party, as a matter of right and without restriction on disclosure; or (d) is disclosed with the written permission of the disclosing party providing the Confidential Information. In addition, the receiving party shall be entitled to disclose Confidential Information of the disclosing party pursuant to a requirement of a governmental agency or law, provided that the receiving party provides prompt written notice to the disclosing party of such requirement or law so as to afford the disclosing party an opportunity to intervene and oppose or limit disclosure and/or obtain a protective order.

The parties acknowledge that a breach or threatened breach of confidentiality requirements by either of the parties may cause the non-breaching party to suffer irreparable harm and injury such that no remedy at law will adequately compensate the non-breaching party. Thus, the non-breaching party shall have the right to obtain injunctive relief with respect to any such breach or threatened breach, in addition to damages and other remedies.

18. No Gifts or Gratuities

Neither the Contractor nor any of its employees, agents, or subcontractors shall give title to or possession of any gifts or gratuities of substantial value (i.e., in excess of \$50) (including property, currency, travel/or education programs) to any employee of the Program Administrator, SEERA, the Commission, the Compliance Agent or the Fiscal Agent during the term of this Agreement.

19. Applicability to Subcontractor(s) and Others

The Contractor shall obtain written statements from anyone it employs or contracts with to perform the Work that they understand and agree to be bound by the terms of Paragraphs 14, 15, 16, and 17 of the Main Agreement.

20. Force Majeure

Each party's performance of any part of the Agreement shall be excused if and to the extent that such performance is hindered, delayed or otherwise made impractical by reason of flood, riot, fire, explosion, war, or any other cause beyond such party's reasonable control and not due to such party's negligence. If any such event occurs, the non-performing party shall promptly notify the other party of the nature of such condition and the extent of the delay, and shall make reasonable, good faith efforts to resume performance as soon as possible.

21. Severability

If any provision of this Agreement shall be adjudged to be unlawful or invalid, then that provision shall be deemed null and void and severable from the remaining provisions, and shall in no way affect the validity of this Agreement, and the remaining provisions shall be construed so as to give the greatest effect to the intent of the parties.

22. Survival of Requirements

Unless otherwise authorized in writing by the Commission, the terms and conditions of this Agreement shall survive the term of this Agreement and shall continue in full force and effect until the Contractor has completed, and is in compliance with, all of its requirements.

23. Waiver

Failure or delay on the part of either party to exercise any right, power, privilege or remedy hereunder shall not constitute a waiver thereof. A waiver of any default shall not operate as a waiver of any other type of default or of the same type of default on a different or future occasion.

24. Applicable Law

This Agreement shall be governed by the laws of the State of Wisconsin. The exclusive venue for any dispute or controversy arising out of or under this Agreement shall be the Dane County, Wisconsin Circuit Court or the Federal District Court for the Western District of Wisconsin.

25. Single Audit

The Contractor shall have a certified annual audit performed utilizing Generally Accepted Accounting Principles and Generally Accepted Accounting Standards.

26. Entire Agreement

This Agreement, including its Attachments, represents the entire agreement between the parties relating to the subject hereof. All prior and contemporaneous agreements, representations, statements, negotiations, and understandings (whether written or oral) are merged herein and shall have no effect. Attachment C is for informational purposes and may be updated from time to time by mutual agreement.

The Policy Manual does not form a part of this Agreement, although it does provide rules, regulations and policies of the Focus on Energy Program that must be followed by the Contractor and subcontractors. In the event of any conflict between the provisions of this Agreement and the provisions of the Policy Manual, the provisions of this Agreement shall take precedence.

ATTACHMENT A

SCOPE OF WORK – MANAGEMENT AND OPERATIONS

1. Introduction

This contract provides the scope of work and budget for the evaluation of the Focus on Energy Program, for the contract period of June 12, 2019 to June 30, 2023.

2. Evaluation Objectives

The overall evaluation objectives for the Focus on Energy program are to:

- a. Determine, through independent analysis and validation of the documentation provided by the Program Administrator, for each program and portfolio:
 - Annual, lifecycle, and lifetime gross and net kWh savings;
 - Annual, lifecycle, and lifetime gross and net peak kW savings;
 - Annual, lifecycle, and lifetime gross and net therm savings;
 - Cost-effectiveness under the Modified TRC and all informational tests required by the Commission.

Lifecycle savings shall be defined as the annual savings for a given measure multiplied by its effective useful life (EUL). Lifetime savings shall be defined as all savings occurring in a program year from measures installed during that year and measures installed in previous years that remain within their EULs. The Commission and Contractor will determine and agree on data to include from prior program years based on data availability and quality.

- b. Conduct process evaluations to assess and help improve the design and implementation of Focus on Energy programs.
- c. Assess participation satisfaction for each program where participant information is available and portfolio.
- d. Determine the economic, environmental, and other non-energy benefits achieved by Focus on Energy.
- e. Work with the Program Administrator to determine appropriate deemed savings for simple measures and appropriate calculation methods and inputs for more complex measures that require project-specific calculations.
- f. Conduct market research to assess market transformation effects, inform program design, and provide updated assessments of Focus on Energy's future potential, market transformation energy savings, and other key metrics.
- g. Work collaboratively with Commission staff, the Program Administrator, and other Focus on Energy staff to make informed program decisions.

3. Evaluation Planning

The Contractor shall, at the direction of PSC staff, develop plans to monitor, verify, evaluate, and report on the energy savings, demand savings, and other effects of Focus on Energy programs.

a. Strategic Evaluation Plan

The Contractor shall update the Strategic Evaluation Plan (SEP) to ensure it encompasses all Focus on Energy programs. The SEP shall identify how all evaluation objectives shall be addressed by:

- Defining the overall framework of policies, priorities, and processes that shall be used to conduct evaluation work;
- Defining the methods that shall be used to address each evaluation objective, including the methods that will be used to assign verified energy savings to individual programs and individual years;
- Identifying specific processes and tasks that shall be taken to address the objectives; and
- Identifying criteria that shall be used to set priorities among evaluation functions and guide the allocation of finite contract resources, including the establishment of statistical confidence and precision standards for the development of evaluation samples, and an indication of and rational for the relative level of effort to be given to each evaluation function.

Updating the SEP shall begin immediately after contract execution. The Contractor shall meet with Commission and Program Administrator staff to gather feedback on the content of the SEP. The final draft plan shall be submitted for review by the Evaluation Work Group and for final approval by Commission staff. The approved SEP shall be a “living document” and shall be revised as appropriate throughout the contract term.

b. Program and Portfolio Evaluation Plans

Within the framework set by the SEP, the Contractor shall develop program-level and portfolio-level evaluation plans on an annual basis. These annual plans shall describe in detail the evaluation tasks to be carried out during the year, including plans for impact and process evaluation of each program and plans for each additional evaluation objective. The plans shall specify the budgets for each task and objective.

The Contractor shall meet with Commission and Program Administrator staff to gather feedback on the content of annual plans. Draft plans shall be submitted for review by the Evaluation Work Group and for final approval by Commission staff. Where appropriate, annual plans should be revised from the SEP or previous years’ annual plans to take into account new issues, findings from ongoing evaluation work, and shifts in program priorities. The Contractor will accommodate a rearrangement of priorities at the direction of the Commission at any time during the contract period.

4. Implementation of Evaluation Plans

The Contractor shall implement the SEP and annual evaluation plans to monitor, verify, evaluate, and report on energy savings, demand savings, and other Focus on Energy outcomes outlined in the Evaluation objectives.

Evaluation methods that will be used to carry out these duties shall include, but not be limited to:

- Acquiring, verifying, and analyzing data collected by program staff, including but not limited to all data entered into Focus on Energy's enterprise data system;
- Calculating gross annual, lifecycle, and lifetime energy savings and demand savings used field verification, deemed savings, measurement and verification, billing analysis, or other methods as appropriate;
- Calculating net energy savings and demand savings using surveys, market research, interviews, billing analysis, sales data, or other methods;
- Developing and deploying survey instruments for program staff, participants, trade allies, or others involved in the program;
- Interviewing program staff and participants;
- Analyzing program materials, including but not limited to program policies and procedures, marketing materials, and internal program records;
- Calculating cost-effectiveness of programs and portfolios using data on program energy savings and costs and the methods and inputs approved by the PSC;
- Acquiring, verifying, and analyzing market data to inform the market impacts of existing Focus on Energy programs and the savings potential for future programs.
- Working with Commission staff and program staff to update and manage the Focus on Energy Technical Reference Manual (TRM);
- Coordinating reporting with Commission staff and program staff.

5. Reporting and Deliverables

Reporting by the Contractor shall include, but not be limited to:

- Weekly meetings with Commission staff to provide updates regarding ongoing evaluation work and coordinate evaluation activities with Commission and program activities;
- Quarterly meetings with Commission staff and program staff to identify major findings and observations for the quarter, review project methods and plans, and gather feedback to assess whether to adjust evaluation plans and methods.
- Ad hoc reporting to document problems and resolutions as they arise.
- Energy savings and participation data will be made available to the public in an accessible format that is agreed upon by Commission staff and Contractor in addition to the written reports.

In addition, the Contractor shall participate as appropriate in meetings with Commission and program staff to discuss any evaluation-related issues and to provide for collaborative input from all staff on program issues.

Written deliverables shall include, but not be limited to:

- Annual evaluation reports that summarize the impacts of Focus on Energy programs during each calendar year and any other evaluation findings, observations, and recommendations from evaluation work conducted during the year. The annual reports for 2019, 2020, and 2021 shall assess Focus on Energy's progress to date towards the 4-year program goals set for 2019-2022. The 2022 report shall summarize and analyze aggregate impacts over the four years of the contract period. Reports for each program year shall be published no later than May of the following year.
- Annual deemed savings updates which recommend changes to savings values and inputs for existing measures based on evaluation findings, market research, savings potential analysis, or other sources.
- Annual updates to the Focus on Energy TRM, which incorporate new workpapers approved by Commission staff and savings updates approved through a written report or other agreed upon format.
- Biennial economic impact reports that identify the economic benefits achieved through Focus on Energy's activities and analyze program cost-effectiveness with those benefits included.
- A potential study report submitted in advance of the Commission's scope determinations for Quadrennial Planning IV. The study shall integrate new research and the 2017 Potential Study findings to assess Focus on Energy savings potential from 2023 through 2034 and appropriate savings goals for the 2023-2026 quadrennium.

All final reports shall be delivered to the Commission for posting on the Focus on Energy website.

Commission staff may request reports or memoranda on the findings from specific evaluation analyses that are performed as part of the existing evaluation plans in advance of, in lieu of, or in addition to including those findings in the reports specified above.

Commission staff may request deliverables on new issues that arise outside of previously approved evaluation plans, including but not limited to issues that arise from changes in Commission policies, changes to program designs and approaches, and/or findings from completed evaluation work. The Contractor shall cooperate with the Commission to respond to all requests for information on the Focus on Energy programs from the public, the Legislature, the Governor's office, and other interested parties.

6. Contract Management and Administration

The Contractor will receive high-level guidance and direction from the Commission's designated representative, including to set priorities for evaluation activities and to ensure evaluation activities are completed within budget and on schedule. The Contractor shall engage with PSC staff on strategy and policy issues and accept Commission guidance, review and comment on all project deliverables. All deliverable, survey instruments, and other documents to be shared with program participants and the public shall be submitted in draft form to the Commission's designated representatives for review and approval. As appropriate, the Commission may also request review from the Program Administrator and its subcontractors, Evaluation Work Group members, or other knowledgeable parties before granting approval. The Evaluator will work with all involved parties to address questions and comments raised during the review before finalizing the documents. The

Contractor shall provide Commission staff full access to the Contractor's work products, including but not limited to raw data, assumptions, formulas, and calculations, to assist Commission staff in analysis of Focus on Energy performance and in the production of reports and memoranda to inform Commission oversight of the program. Commission staff shall review and approve Contractor invoices for payment.

The Contractor shall be responsible for evaluation management duties, including:

- Managing subcontractors to ensure the evaluation team speaks with one voice and that subcontractors follow the requirements outlined in the Focus on Energy Policies and Procedures Manual;
- Participating in the Evaluation Work Group;
- Maintaining and archiving files and data collected or developed during the conduct of the evaluation work. The documentation is the property of the Commission and shall be turned over at the end of the contract term.
- Attending and facilitating meetings as needed;
- Maintaining an accounting system for the financial management of the evaluation that shall provide all data required by the Commission and compliance agent; and
- Providing invoices in a timely manner.

The Contractor is approved to contract with the subcontractors listed below. Subcontractors may not contract out work to other organizations.

- Nexant
- Apex Analytics, LLC
- CREED
- REMI
- St. Norbert College Strategic Research Institute

The Contractor may subcontract evaluation tasks to additional subcontractors only with the prior written approval of the Commission.

The Contractor shall comply, and shall cause all of its subcontractors to comply, with all reasonable auditing requests made by the Compliance Agent as directed by the Commission. The Contractor shall cooperate, and shall cause all of its subcontractors to cooperate, in a timely manner with the Compliance Agent and meet deadline requests set by the Compliance Agent (as such requests may be extended by the Compliance Agent in its discretion in response to a request for change or extension that has been made in writing). The Commission may withhold payments otherwise due to the Contractor until the Contractor and all of its subcontractors have fully complied with an audit request. The Compliance Agent shall grant Contractor and its subcontractors at least ten (10) days to respond to audit requests. The Contractor and each of its subcontractors shall have the opportunity to review and comment on that portion of any draft audit report that applies to it, and discuss any draft findings with the Compliance Agent, prior to the audit report being sent to the Commission and finalized. Should the Compliance Agent find that (i) the Contractor has invoiced the Focus on Energy Program for a non-reimbursable charge, cost or expense, or has otherwise overcharged Focus on Energy, or (ii) the Contractor has invoiced the Focus on Energy Program for charges, costs or expenses that the Compliance Agent is unable to substantiate, then upon request of the Commission, the Contractor shall reimburse the Focus on Energy Program for the amount in question by a credit or correction on its next invoice.

7. Cybersecurity

The Contractor will, within 12 months of contract signature, successfully complete a SOC 2 Type I engagement. Thereafter the Contractor will successfully complete a SOC 2 Type II engagement annually.

Successful completion of the aforementioned engagements must include the issuance of a report with an opinion that the Contractor's controls are suitably designed to provide reasonable assurance that the trust principles are being met, and, if applicable, the controls operated effectively throughout the audit period.

The Contractor may substitute an already completed SOC 2 Type II report for the aforementioned requirements.

For each SOC engagement, the engagement will review, at a minimum, controls related to the Common Criteria (aka Security) and Confidentiality trust principles. For Type II engagements the timeframe covered will be not less than 6 months and no greater than 12 months. For periods less than 12 months, the Contractor will issue an appropriate and accurate bridge letter. The Contractor will share each final report issued by the auditing firm within 5 business days of issuance with the Commission.

If the SOC 2 report indicates the existence of any noted exceptions to controls, the Contractor will have 60 days to mitigate any noted deficiencies. This mitigation will be at the Contractor's expense and will not be billed to the Commission.

Failure to successfully complete a SOC 2 engagement as noted above, or failure to successfully mitigate and noted exceptions, may be considered a material breach of contract.

If mutually agreed upon between the Contractor and the Commission, an appropriate alternate attestation engagement, audit, or certification may be substituted for a SOC 2.

The Contractor will promptly notify the Commission of any security incident related to Focus on Energy data for which it is responsible, whether caused by malicious use, attack or exploitation of systems, unauthorized use of Customer Information by a person for purposes of theft, fraud, identify theft, or alteration of information and/or transmission of malicious code. The Contractor will investigate the reasons for and circumstances surrounding the Security Incident and take necessary actions to prevent, contain, and mitigate the impact of the Security Incident. Administrator will collect and preserve evidence concerning the Security Incident, including documentation regarding incident response and remedial actions taken.

ATTACHMENT B

COMPENSATION, PAYMENT, AND PERFORMANCE BONUS

1. Total Compensation

The total amount payable under this agreement shall not exceed **\$12,500,000**. This compensation is for performance of the Scope of Work described in Attachment A. Table 1 specifies the initial project budget agreed to by the Commission and the Contractor.

Table 1: Project Budget by Year, 2019-2023

Duty	CY2019	CY2020	CY2021	CY2022/23	Total
Program Impact and Process Evaluation	\$1,340,726	\$2,489,110	\$1,908,513	\$2,694,555	\$8,432,904
Cost-Effectiveness Testing	\$12,735	\$31,837	\$31,837	\$50,941	\$127,350
TRM and Savings Calculations	\$123,943	\$189,560	\$189,560	\$199,645	\$702,708
Market Research	\$89,216	\$100,832	\$26,180	\$255,452	\$471,680
Customer Satisfaction	\$56,638	\$98,636	\$94,636	\$140,514	\$390,424
Data Management and Support	\$85,259	\$194,175	\$137,336	\$214,966	\$631,736
Economic and Other Non-Energy Impacts	\$81,626	\$34,982	\$99,116	\$0	\$215,724
Potential Study	\$0	\$200,000	\$954,534	\$0	\$1,154,534
Administration	\$50,284	\$100,568	\$100,568	\$121,520	\$372,940
Total	\$1,840,427	\$3,439,700	\$3,542,280	\$3,677,593	\$12,500,000

At a minimum, budget allocations by year and by duty shall be reviewed on an annual basis, consistent with the development of annual evaluation plans and any revisions to the SEP. No budget modifications shall take effect unless and until it has been approved by Commission staff. The budgeted amounts set forth in Table 1 are maximum amounts, not fixed payment amounts. Any unspent funds within a given year may be rolled into the subsequent year. In no event shall the Contractor invoice or be paid fees in excess off the total amount payable under this agreement, even if eligible charges exceed that amount.

At the beginning of each year, Contractor shall provide estimates of subcontractor cost allocation to the PSC for approval.

2. Eligible Time, Materials, and Expenses

The Contractor shall be compensated for reasonable and appropriate services provided and expenses incurred in order to perform the Scope of Work in Attachment A. This is a cost-reimbursable contract. All invoices shall be based on actual expenses.

Work will be performed on a time and materials basis, with compensation due for all goods and services provided by the Contractor, computed in accord with currently-in-effect Contractor billing rates. Contractor's applicable rate schedule for the services is included in this attachment. Contractor's allowable costs shall include: hourly rates of staff working directly on the work; any and all out-of-pocket costs directly attributable to the work (including telecommunications, travel, copying/printing, postage/delivery, and equipment); travel reimbursement, subject to the requirements of the Focus on Energy Policy Manual; any and all subcontractor costs directly attributable to the work; and appropriate costs that the Contractor incurs to accomplish the work.

At a minimum, the Contractor shall submit to Commission staff on a monthly basis an invoice for the previous month's expenses. Invoices shall include summaries of employee billing which include name, title, line item, hours worked, billing rate, and total billed by employee. Invoices will be paid by the Focus on Energy Fiscal Agent. The Contractor shall be responsible for payment of all subcontractors pursuant to approved subcontractor agreements.

In order to recognize the value of a local presence to effective evaluation work, and prevent the cost of travel from being an undue burden to ratepayers, the Contractor agrees not to charge reimbursements for any costs of travel to the state of Wisconsin by the Principal Investigator or the Technical Reference Manual manager, if those employees are based outside the state of Wisconsin. The contractor shall only charge reimbursement for one half of the total cost of travel to the state of Wisconsin by any other employee based outside the state. Travel costs from site to site within the state will be fully reimbursed for all staff.

Should the Compliance Agent find that the Contractor has invoiced the Focus on Energy Program for a non-reimbursable expense, the Contractor shall reimburse the Focus on Energy Program by a correction on the next invoice.

3. Shifting of Evaluation Funds

The Contractor may move program funds between the categories in Table 1 during the contract period. The Contractor shall inform Commission staff of such changes on the next monthly invoice or by other written notice approved by Commission staff. Funding shifts greater than \$100,000 or 10 percent of at least one line item involved in the transfer, whichever is lesser, require prior written approval from Commission staff.

4. Hourly Rates

Hourly rates of staff shall be based on employee title, as specified in Table 2. The rates listed in Table 2 will go into effect for work under this contract as of June 12, 2019, and will remain in effect through June 30, 2023.

Table 2: Hourly Staff Rates, 2019-2023

Title	CY19-CY20	CY21-CY23
Senior Advisor II	\$310	\$329
Principal II	\$290	\$307
Senior Advisor I	\$275	\$292
Principal I	\$265	\$281
Project Director	\$250	\$265
Senior Associate II	\$232	\$246
Senior Associate (Apex)	\$210	\$223
Senior Associate I	\$205	\$217
Associate II	\$190	\$201
Associate (Apex)	\$180	\$191
Associate I	\$172	\$182
Senior Engineer (Nexant)	\$170	\$180
Senior Analyst II	\$162	\$172
Senior Analyst I	\$150	\$159
Technical Editor	\$145	\$154
Senior Administrator	\$140	\$148
Analyst II	\$135	\$143
Analyst I	\$125	\$133
Engineering Technician III	\$114	\$121
Research Analyst	\$105	\$111
Analyst (Nexant)	\$90	\$95
Engineering Technician II	\$90	\$95
Engineering Technician I	\$65	\$69
Administrative Support	\$66	\$70
Engineer (Nexant)	\$65	\$69

5. Project Staff

The proposed staff for completion of the Work, with a billing rate of \$150 per hour or above, are presented in Attachment C. Each individual is listed with his or her current title. Included at the end of Attachment C are bios for each of the staff proposed.

The Contractor shall notify the Commission of any significant staffing changes that occur during the period of the contract, including but not limited to:

- Assignment of additional staff not previously listed in Attachment C to perform more than 40 hours of work under this contract;
- Cessation of project work by project staff by staff members performing an average of more than 40 hours per month on the project during the previous six months; and
- Title changes which will result in individual staff being billed at a different rate than on previous invoices.

Notifications shall occur no later than the submission of the first invoice which reflects the change. Notifications may occur by submitting updated versions of Attachment C. Attachment C shall be updated no less than once per year to remove staff no longer performing work to the program, add staff newly assigned to the program with billing rates of \$150 or above, and add existing staff whose title changes have increased their billing rate from below \$150 to \$150 or above.

The Commission retains the right to request information regarding qualifications of any staff charging time under this contract and to disallow further work from any staff.

6. Meter Leasing

The rates for the leasing of the most common equipment are specified in Table 3. For equipment that is not listed in Table 3, Contractor will submit rates for Commission approval on a case by case basis.

Table 3: Equipment Leasing Rates, 2019-2023

Model #	Description	Monthly Lease Each
FlexSmart S-FS-CVIA	Analog module	\$11.35
FlexSmart S-FS-TRMSA	TRMS module	\$12.11
FlexSmart S-FS-TRMSA-D	TRMS module with modular plug	\$15.75
H6812-1000A-.3V	1000A CT split core	\$13.96
H6812-1200A-.3V	1200A CT split core	\$13.96
Hobo H21-002	SMART Logger - Microstation	\$11.55
Hobo H21-002W	SMART Logger - Microstation (waterproofed)	\$12.80
Hobo H22-001 EXT	SMART Logger - Energy Logger Pro (ELP) (extended memory)	\$18.20
Hobo H22-001 STND	SMART Logger - Energy Logger Pro (ELP) (standard memory)	\$18.20
Hobo MX1102	CO2 Logger	\$29.75
Hobo RX3000 3G	SMART Logger - RX3000 3G-enabled Remote Monitoring Station	\$44.95
Hobo U12-006	Four channel logger: 4 ext. channels	\$14.41
Hobo U12-012	Four channel logger: temp, RH, light, plus external	\$21.00
Hobo U12-013	Four channel logger: temp, RH, plus two ext.	\$21.00

Hobo U30: NRC	SMART Logger - U30 Weather Station (basically discontinued)	\$29.25
Hobo UA-002-64	Pendant data logger - temperature/light intensity	\$8.16
Hobo UX100-003M	Temperature/RH Standalone Data Logger	\$17.10
Hobo UX100-014M	Thermocouple logger	\$20.85
Hobo UX100-014MW	Waterproofed thermocouple logger	\$24.60
Hobo UX100-023	Temp/RH logger with external sensor	\$9.45
Hobo UX100-023M	Logger w/ external temp/rh sensor, extended memory	\$10.70
Hobo UX120-006M	4-Channel Extended Memory Analog Logger	\$20.85
Hobo UX120-017M	FRour channel pulse data logger	\$16.25
Hobo UX120-018	Plug-load data logger	\$35.85
Hobo UX90-001	State/Pulse Logger	\$13.80
Hobo UX90-001M	State/Pulse Logger w/ Extended Memory	\$18.15
Hobo UX90-002	Light on/off Logger	\$13.80
Hobo UX90-002M	Extended memory light on/off logger	\$18.15
Hobo UX90-002W	Waterproofed light on/off logger	\$17.55
Hobo UX90-004	motor on/off logger	\$13.80
Hobo UX90-004W	Waterproofed motor on/off logger	\$17.55
Hobo UX90-005	Occupancy/Light Logger Short Range	\$20.50
Hobo UX90-006	Occupancy/Light Logger Long Range	\$20.50
RS3	Solar Shield for Temp/RH sensor	\$9.75
RXMOD-A1	RX3000 Analog Module	\$14.40
S-ADAPT-6	SMART sensor consolidator box	\$13.39
SCT-0400-001	1A CT split core, small	\$5.25
SCT-0400-005	5A CT split core, small	\$5.25
SCT-0400-010	10A CT split core	\$5.25
SCT-0400-020	20A CT split core, small	\$5.25
SCT-0400-050	50A CT split core, small	\$5.25
SCT-0750-005	5A CT split core	\$6.90
SCT-0750-020	20A CT split core	\$6.90
SCT-0750-030	30A CT split core	\$6.90
SCT-0750-050	50A CT split core	\$6.90
SCT-0750-100	100A CT split core	\$6.90
SCT-1250-100	100A CT split core (Large)	\$7.05
SCT-1250-200	200A CT split core	\$7.05
SCT-1250-250	250A CT split core	\$7.05
SCT-1250-300	300A CT split core	\$7.05
SCT-1250-400	400A CT split core	\$7.05
SCT-2000-600	600A CT split core	\$8.55
TMC1-HA	1ft U12 External Temp Sensor	\$4.46
TMC1-HD	1ft U12 External Temp Sensor	\$5.25
TMC20-HD	20ft U12 External Temp Sensor	\$6.60
TMC50-HD	50ft U12 External Temp Sensor	\$7.50
TMC6-HD	6ft U12 External Temp Sensor	\$5.85

TMC6-HE	6ft U12/UX120 External Temp Sensor with Copper Plated Sensor	\$6.00
T-VER-E50B2	Compact Power and Energy Meter	\$29.95
T-VER-H300	AC current switch sensor	\$13.56
T-VER-H900	AC current switch sensor	\$10.18
T-VER-H971	200A DC Current Sensor	\$8.80
TX91A-K6	Temperature Transmitter	\$16.35
WattNode Pulse WNB-3D-240-P	240v RMS AC watt-hour transducer; delta configuration; single pulse output	\$11.50
WattNode Pulse WNB-3D-480-P	480v RMS AC watt-hour transducer; delta configuration; single pulse output	\$12.15
WattNode Pulse WNB-3Y-208-P	120v RMS AC watt-hour transducer; wye configuration; single pulse output	\$9.90
WattNode Pulse WNB-3Y-208-P3	120v RMS AC watt-hour transducer; wye configuration; 3-pulse output	\$10.89
WattNode Pulse WNB-3Y-480-P3	480v RMS AC watt-hour transducer; wye configuration; 3-pulse output	\$12.65
WattNode Pulse WNB-3Y-600-P	600v RMS AC watt-hour transducer; wye configuration; single pulse output	\$12.15

ATTACHMENT C

Contacts and Approved Staff

This attachment is for informational purposes only.

Contacts for the Commission

Commission's designated representative for invoicing and notifications

Joe Fontaine, Focus on Energy Performance Manager
Division of Business and Program Management
Public Service Commission of Wisconsin
North Tower, 6th Floor
Hill Farms State Office Building
4822 Madison Yards Way
Madison, WI 53705-9100
(608) 266 0910

Joe.Fontaine@wisconsin.gov

Alternative contacts

Jolene Sheil
Focus on Energy Portfolio Manager
(608) 266-7375
Jolene.sheil@wisconsin.gov

Cadmus Contacts

Principal Investigator

Steve Cofer, Principal
Energy Services Division
(503) 467-7153
steve.cofer@cadmusgroup.com

Project Manager

Amalia Hicks
Energy Services Division
(608) 807-4023
amalia.hicks@cadmusgroup.com

Administrative Manager

Colton Bushey
Energy Services Division

(608) 807-4034
Colton.Bushey@cadmusgroup.com

Invoicing

Christopher Donahue
Accounting Division
(617) 673 7153
costpoint@cadmusgroup.com

Contracts

Cheryl Callinan
Energy Services Division
(503) 467 7103
cherly.callinan@cadmusgroup.com

Compliance Audit Contact

See: Project Manager, Administrative Manager and Contracts (above)

Approved Staff

Company	Personnel (Name)	Title
Apex	Scott Dimetrosky	President
Apex	Katie Parkinson	Senior Associate
Apex	Noah Lieb	Associate
Apex	Jon Koliner	Associate
Apex	Lauren Gage	Project Director
Apex	Joe Van Clock	Senior Analyst
Cadmus	M. Sami Khawaja	Senior Vice President
Cadmus	Terry Fry	Senior Vice President
Cadmus	Brian Hedman	Executive Director
Cadmus	Anne West	Principal
Cadmus	Grant Jacobsen	Principal
Cadmus	Jane Colby	Principal
Cadmus	Jeff Cropp	Principal
Cadmus	Jim Stewart	Principal
Cadmus	Steve Cofer	Principal
Cadmus	William Warren-Hicks	Principal
Cadmus	Amalia Hicks	Senior Associate II
Cadmus	Aquila Velonis	Senior Associate II
Cadmus	Cheryl Winch	Senior Associate II
Cadmus	Heidi Javanbakht	Senior Associate II
Cadmus	Hope Lobkowicz	Senior Associate II
Cadmus	Jennifer Hockett	Senior Associate II
Cadmus	Jim Jolley	Senior Associate II
Cadmus	John Walczyk	Senior Associate II
Cadmus	Matei Perussi	Senior Associate II
Cadmus	Randy Mead	Senior Associate II
Cadmus	Robert Huang	Senior Associate II
Cadmus	Ryan Hughes	Senior Associate II
Cadmus	Scott Reeves	Senior Associate II
Cadmus	Tyler Hammer	Senior Associate II
Cadmus	Danielle Burns	Senior Associate
Cadmus	Danielle Kolp	Senior Associate
Cadmus	Emily Miller	Senior Associate
Cadmus	Jason Christensen	Senior Associate
Cadmus	Jeana Swedenburg	Senior Associate
Cadmus	Jessica Lorenz	Senior Associate
Cadmus	Lakin Garth	Senior Associate

Company	Personnel (Name)	Title
Cadmus	Ana Rosner	Associate II
Cadmus	Andrew Rietz	Associate II
Cadmus	Bill Atkinson	Associate II
Cadmus	Bitsy (Mary) Broughton	Associate II
Cadmus	Hanna Lee	Associate II
Cadmus	Jenna Lipscomb	Associate II
Cadmus	Jill Krueger	Associate II
Cadmus	Joel Zahlan	Associate II
Cadmus	John Lindquist	Associate II
Cadmus	Kristie Rupper	Associate II
Cadmus	Laura James	Associate II
Cadmus	Mike Kaar	Associate II
Cadmus	Mitt Jones	Associate II
Cadmus	Rasika Savkar	Associate II
Cadmus	Scott Davis	Associate II
Cadmus	Sepideh Shahinfard	Associate II
Cadmus	Shannon Donohue	Associate II
Cadmus	Alexander Trueblood	Associate
Cadmus	Andrew Carollo	Associate
Cadmus	Andrew Grant	Associate
Cadmus	Christie Amero	Associate
Cadmus	Elissa Slocum	Associate
Cadmus	Gina Henderson	Associate
Cadmus	James Kennedy	Associate
Cadmus	Jeremy Eckstein	Associate
Cadmus	Kari Heinrich	Associate
Cadmus	Mark Janett	Associate
Cadmus	Masumi Izawa	Associate
Cadmus	Matthew Wisnyske	Associate
Cadmus	Mike Kocsmiersky	Associate
Cadmus	Robert Lamoureux	Associate
Cadmus	Sarah Budinger	Associate
Cadmus	Stephen Tobey	Associate
Cadmus	Althea Koburger	Senior Analyst
Cadmus	Athena Dodd	Senior Analyst
Cadmus	Bradley Jones	Senior Analyst
Cadmus	Brian Evans	Senior Analyst
Cadmus	Casey Stevens	Senior Analyst

Company	Personnel (Name)	Title
Cadmus	Daniel Scognamiglio	Senior Analyst
Cadmus	David Ladd	Senior Analyst
Cadmus	David Molner	Senior Analyst
Cadmus	David Tripamer	Senior Analyst
Cadmus	Elena Kazarov	Senior Analyst
Cadmus	Elliot Himmelfarb	Senior Analyst
Cadmus	Evan Hatteberg	Senior Analyst
Cadmus	John Kongoletos	Senior Analyst
Cadmus	Maggie Buffum	Senior Analyst
Cadmus	Matthew Gluesenkamp	Senior Analyst
Cadmus	Megan Ottesen	Senior Analyst
Cadmus	Nathan Hinkle	Senior Analyst
Cadmus	Robert Celustka	Senior Analyst
Cadmus	Taylor Bettine	Senior Analyst
Cadmus	Torsten Kieper	Senior Analyst
Cadmus	Alex Chamberlain	Analyst
Cadmus	Amanda McLeod	Analyst
Cadmus	Andres Roma	Analyst
Cadmus	April Hersey	Analyst
Cadmus	Ari Kornelis	Analyst
Cadmus	Brad Acker	Analyst
Cadmus	Dylan Vaughn	Analyst
Cadmus	Eugenia Preston	Analyst
Cadmus	Jaclyn Rambarran	Analyst
Cadmus	Jeff Abromowitz	Analyst
Cadmus	Jonathan Lee	Analyst
Cadmus	Katie Browning	Analyst
Cadmus	Shannon Greene	Analyst
Cadmus	Thomas Davies	Analyst
Cadmus	Kaitlyn Teppert	Analyst
Cadmus	Brian Pizzi	Research Analyst
Cadmus	Colton Bushey	Research Analyst
Cadmus	Taylor La Prairie	Research Analyst
Cadmus	Amber Fischer	Technical Editor
Cadmus	Diane Sisk	Technical Editor
Cadmus	Leslie Anderson	Technical Editor
Cadmus	Steve Patterson	Technical Editor
Cadmus	Andre Bergeron	Engineering Technician II

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Company	Personnel (Name)	Title
Cadmus	Caleb Wisch	Engineering Technician II
Cadmus	Ian Nimmo	Engineering Technician II
Cadmus	Aaron Huston	Engineering Technician
Cadmus	Elizabeth Rollins	Engineering Technician
Cadmus	Nora Twichell	Engineering Technician
Cadmus	Romi Jones	Engineering Technician
Cadmus	Emily Shackleton	Engineering Technician
Nexant	Charles Bicknell	Senior Vice President
Nexant	Brian Albert	Vice President (Principal I)
Nexant	Brad Pierce	Vice President (Principal I)
Nexant	Myles Collins	Managing Consultant (Project Manager)
Nexant	Ron Shaw	Managing Consultant (Project Manager)
Nexant	Kevin Coleman	Project Manager
Nexant	Nicholas Schulz	Project Manager
Nexant	Andrew Dionne	Senior Consultant (Engineer III)
Nexant	Robert Smith	Data Scientist (Engineer II)

Approved Staff Bios

Aaron Huston, Engineering Technician, Cadmus

Aaron Huston, a scheduler with Cadmus, provides support to field staff on various energy-efficiency projects through evaluation, recruitment and scheduling of participant sites. Before joining Cadmus, Aaron worked for many years as a field claims adjuster for a large insurance company. He has also worked as a corporate trainer of new and established employees. Aaron has a BS in Sociology from Oregon State University.

Alexander Trueblood, Associate, Cadmus

Alexander Trueblood, an associate with Cadmus, provides evaluation services, engineering analysis, on-site auditing, and measurement and verification services as a part of the Energy Services Division. His experience includes the conceptual design of complex mechanical heating/cooling plants, ventilation systems, cogeneration systems, and wastewater treatment systems.

Prior to joining Cadmus, Alex worked for an energy efficiency consulting firm. He has extensive experience working with both new construction and existing building project teams to improve energy efficiency and building performance.

Alexander holds a bachelor's degree in mechanical engineering from San Francisco State University and is a licensed P.E. in California.

Alex Chamberlain, Analyst, Cadmus

Alex Chamberlain provides evaluation services and conducts statistical and econometric analysis as a research analyst on Cadmus' Program and Market Analysis team in its Energy Services Division.

Prior to joining Cadmus, Alex consulted for the World Bank and the Climate Trust, a Portland-based non-profit organization, by building for each client a spreadsheet-based dynamic tool for projects targeting environmental and climate-based concerns. As a graduate assistant and student at Portland State University, Alex investigated potential causal links between the State of Oregon's educational spending and student outcomes on behalf of Our Oregon, another Portland-based non-profit.

Alex holds a master's degree in economics from Portland State University and a bachelor's degree in economics from Chapman University.

Althea Koburger, Senior Analyst, Cadmus

Althea Koburger contributes to project management, program and process evaluations, and best practice studies. She has contributed extensively to survey and interview design, data collection, and analysis of findings for a variety of energy-efficiency programs. She also manages projects; identifying resources, tracking timelines and budgets, recruiting and managing subcontractors, and working with clients to ensure satisfaction with Cadmus deliverables. Althea has also assisted on case studies, literature reviews, and proposals. Althea holds a BA in business from Skidmore College, an MA in international affairs from The George Washington University, and recently completed a certificate program in Project Management through the Georgetown University School of Continuing Studies.

Amalia Hicks, Senior Associate, Cadmus

Amalia Hicks, a senior associate in Cadmus' Energy Services Division, has more than 15 years of experience in research, study planning, project management, data visualization, and results interpretation. Her responsibilities include evaluating demand-side efficiency measures, technologies, and building codes; gathering market information via stakeholder interviews and surveys; analyzing customer billing data; and assisting in program planning and design for energy efficiency programs funded by investor-owned utilities.

Before joining Cadmus, Dr. Hicks served as the Director of Research at Sustainable Engineering Group, where she developed and led its energy efficiency research program. Her clients have included the U.S. Department of Energy, the Minnesota Department of Commerce, Wisconsin Focus on Energy, ASHRAE, and NASA.

Dr. Hicks holds a Ph.D. in Astrophysics from the University of Colorado Boulder, a Master of Physics from MIT, and a Bachelor's Degree in English Literature from Macalester College. She is an accomplished speaker, and she has authored more than 20 peer-reviewed journal publications.

Amanda McLeod, Analyst, Cadmus

Amanda McLeod, an analyst in Cadmus' Energy Services sector, specializes in process evaluation techniques including survey and interview design and analysis; impact evaluation techniques including regression analysis, econometric modeling; and data warehousing and quality assurance. Before joining Cadmus, Ms. McLeod was a research and teacher's assistant at the University of New Hampshire. As a graduate student, she researched factors affecting restaurant purchase of locally grown food using an econometric analysis of primary survey data while also leading lab sessions for undergraduate statistics and Environmental Policy.

Ms. McLeod holds a Master's Degree in Natural Resources and Environmental Economics from the University of New Hampshire and a Bachelor's Degree in Economics and History from Westfield State University.

Amber Fischer, Technical Editor, Cadmus

Amber Fischer, a technical editor with Cadmus, has eight years of experience in report editing and formatting, following her career in executive administration and office management for various engineering consulting firms. At Cadmus since 2010, Mrs. Fischer focuses on editing and improving internal and external communication, with projects that have included abstracts, reports, white papers, proposals, and technical reference manuals. Working with the end reader in mind, she skillfully clarifies meaning and ensures consistency in documents written by one or several authors. She also contributed to establishing writing and formatting standards in support of company branding efforts.

As an expert in Microsoft Word, Mrs. Fischer provides formatting technical support to co-workers throughout the country. She also developed and delivered Word format training to more than 200 staff on topics such as using and applying templates and styles, and formatting to the company branding.

Ana Rosner, Associate, Cadmus

Ana Rosner is an Associate at Cadmus with 6 years of experience in statistical and environmental modeling, Geographic Information Systems (GIS), climate change adaptation, and vulnerability and risk assessment. She has completed dozens of GIS analyses, utilizing data sets ranging from hydrology, land cover and land use change, soils, wetlands and ecological classification, demographics, oil and gas extraction, and atmospheric deposition. Ms. Rosner is the coordinator for all GIS projects across Cadmus.

Ms. Rosner's work at Cadmus has supported EPA's Office of Research and Development (ORD), the US Army Corps of Engineers, and the US Agency for International Development (USAID). In three years of federal service with the U.S. Geological Survey, she conducted studies for the US Fish and Wildlife Service NALCC, MassDOT, MassDFW, and the Northeast Climate Science Center.

Andre Bergeron, Engineering Technician, Cadmus

Andre Bergeron is a field technician with Cadmus. Andre was previously a project engineer at a demand management company outside of Boston, Massachusetts that provided energy efficiency services for New England commercial and industrial facilities. His experience includes commercial/industrial facility energy auditing; full building energy modeling; HVAC, lighting, and process equipment energy analysis; energy equipment power metering; and retro commissioning.

Andre has a Bachelor of Science degree in Mechanical Engineering from Cornell University.

Andres Roma, Analyst, Cadmus

Andres Roma, an analyst with Cadmus, works on evaluations of a variety of different residential programs. Andres utilizes his econometric, programming and statistical skills to provide support on impact evaluations. Prior to working at Cadmus, Andres was a student at Binghamton University, where he studied Math and Economics. Here he developed his econometric skills using econometric methods to research the effect of years of schooling on fertility rates in Mexico.

Andrew Carollo, Associate, Cadmus

Andrew Carollo, an associate at Cadmus, provides quantitative analysis for a vast range of impact evaluation activities, with a strong focus developing, implementing and analyzing self-report freeridership analysis for projects throughout the Energy Services Division at Cadmus. In addition to overseeing all net-to-gross (NTG) analyses relating to Vectren Indiana's program evaluations over the last 4 years, Mr. Carollo has been the lead program evaluator of the Vectren Indiana's Appliance Recycling Program (ARP). Over the last four years of leading the Vectren Indiana ARP evaluations, Mr. Carollo has overseen the transition to and the implementation of the Uniforms Method Protocol (UMP) into the program evaluation.

In his seven years at Cadmus, Mr. Carollo has performed a wide range of evaluation tasks, ranging from commercial rooftop HVAC equipment metering, data collection, energy signature analysis and diagnostics, to cost effectiveness analysis of portfolio evaluations. Mr. Carollo has contributed to developing peak energy demand savings calculation tools, in particular a customized solution for Consolidate Edison of New York that allowed the utility to more accurately predict the overall system peaks given fully customizable system peak definitions.

Mr. Carollo holds bachelor's degrees in economics and in business administration from the University of Oregon.

Andrew Dionne, Senior Consultant (Engineer III), Nexant

Andrew Dionne is a Consultant in Nexant's Strategy & Planning group located in the Louisville, CO office. His emphasis on measurement & verification (M&V) allows him to leverage data logging techniques that reflect how equipment is used in the field to improve the accuracy of measure, program, and portfolio level results. In addition to M&V, Andrew focuses on program evaluation, energy end-use analysis, and baseline studies. Prior to joining Nexant, Andrew completed energy-focused small commercial design, computer based energy modeling, implementation of energy efficiency building practices and equipment, and on-site verification of energy and demand savings leading to code compliance, LEED®, and ENERGY STAR® certifications.

Andrew Grant, Associate, Cadmus

As a Cadmus associate, Andrew Grant conducts quantitative and qualitative engineering data analysis for a broad range of projects including energy-efficiency program evaluations and measurement and verification efforts. Mr. Grant has more than seven years of experience in utility evaluations (residential and commercial/industrial portfolios), program planning (prescriptive and custom programs), market characterization studies, and energy-saving potential assessments. His evaluation analysis consists of developing a measure savings methodology, comparing the outcome with program assumptions, and conducting quality assurance for various utilities.

Andrew holds a BS in Environmental Engineering from University of Colorado – Boulder.

Andrew Rietz, Associate, Cadmus

Andrew Rietz, an associate at Cadmus, specializes in efficiency engineering related to the residential sector. Mr. Rietz applies his engineering expertise to measuring and verifying energy and performance efficiency. During his time with Cadmus, Mr. Rietz has worked on a variety of HVAC and lighting related projects throughout the United States. These projects focused on energy savings as a result of energy efficient installations and appliance upgrades. Other work has included the development of Technical Reference Manuals as well as the characterization and evaluation of embedded data centers.

Before joining Cadmus, Mr. Rietz worked for Larsen Engineers, a multidisciplinary firm in upstate New York, where he was involved in the energy efficiency retrofit of a wastewater treatment plant. Mr. Rietz also worked as a research assistant to Dr. Amanda Bao and was involved in the finite element modeling and analysis of bridges subjected to seismic loads.

Anne West, Principal, Cadmus

Anne West is a principal in Cadmus' Energy Services Division, and she leads the Market Research and Analysis team. Ms. West has more than 30 years of experience working in the energy services industry. Her areas of expertise encompass market characterization and assessments, and process and impact evaluations of energy-efficiency programs across all sectors. She has conducted single-program evaluations and portfolio evaluations of established, new, and emerging technologies, renewables, demand response, and low-income customer assistance programs. Ms. West has significant experience

working in an interdisciplinary environment with other social scientists, planners, economists, engineers and life science professionals.

April Hersey, Analyst, Cadmus

April Hersey is an Analyst in the Cadmus Energy Services division, where she applies her data processing skills to behavioral intervention studies and pricing programs. Prior to working at Cadmus, she was a database administrator at Renew Financial and at Pecan Street Inc., where she performed statistical analyses of energy sector behavioral intervention studies and a critical peak pricing trial in addition to managing a 4 terabyte collection of residential electricity, gas, and water usage data.

Ms. Hersey holds a bachelor's degree in economics from Lewis & Clark College.

Aquila Velonis, Senior Associate, Cadmus

As a Cadmus senior associate, Aquila Velonis conducts quantitative and qualitative engineering data analysis for a broad range of projects including energy-efficiency program evaluations and measurement and verification efforts. Mr. Velonis is experienced in utility evaluations (residential and commercial/industrial portfolios), program planning (prescriptive and custom programs), market characterization studies, and energy-saving potential assessments. His evaluation analysis consists of developing a measure savings methodology, comparing the outcome with program assumptions, and conducting quality assurance for various utilities. Mr. Velonis has worked with utilities across the country, to assess available potential for energy efficiency. He has also helped the utilities in designing programs by identifying the best mix of cost-effective energy-efficiency measures that best serve the utility's customers. Additionally, he has conducted on-site visits to verify energy-efficient equipment, including installing solar energy systems. Mr. Velonis has expertise installing a broad range of monitoring and measurement equipment such as Onset (Hobo) data loggers, GE ultrasonic liquid flow metering, and Dent power monitoring equipment.

Mr. Velonis holds a master's degree in sustainable energy engineering from the Royal Institute of Technology in Stockholm, Sweden, and a bachelor's degree in physics from Fort Lewis College in Durango, Colorado.

Ari Kornelis, Analyst, Cadmus

Ari Kornelis works as an Analyst on the Statistics and Economics Team in the Cadmus Energy Services Division. In his first few months at Cadmus he has contributed to impact evaluations for strategic energy management, demand response, efficiency kit, and retailer incentive programs. Before joining Cadmus, Ari completed an M.S. in environmental and resource economics at Michigan State University and worked on energy and climate policy at the Council on Environmental Quality under President Obama.

Athena Dodd, Senior Analyst, Cadmus

Athena Dodd, a senior analyst with Cadmus, has 10 years of social science research experience, primarily in survey research. Athena conducts activities in the areas of survey design, sampling, statistical analysis and report presentation and writing. Her areas of expertise include process evaluation and survey research methods and analysis.

Before joining Cadmus in 2015, Athena was a research associate at National Research Center, where she conducted survey research for local governments and program evaluations for health, education and transportation projects.

Athena holds a BS in Biology from Reed College and an MS in Public Health from the University of Colorado Health Sciences Center.

Bill Atkinson, Associate, Cadmus

William (Bill) Atkinson, a Cadmus associate, has more than six years of experience in the renewable-energy field. He is familiar with federal (NEPA), state (SEPA), county, and municipal governmental organizations, functions, policies, and procedures. In addition, he conducts renewable energy resource assessments for solar (PV and thermal), wind, and hydro projects. He has also analyzes the economic feasibility of various renewable energy projects.

Mr. Atkinson holds bachelor's degrees in community and regional planning and in appropriate technology, and he has GIS certificate from Appalachian State University in Boone, North Carolina. His professional continuing education efforts include various renewable energy technologies (photovoltaic, solar thermal, and wind energy system design and installation workshops). He also holds a North American Board-Certified Energy Practitioners NABCEP (photovoltaic certificate).

Bitsy (Mary) Broughton, Associate, Cadmus

Bitsy Broughton, an associate at Cadmus, is an accomplished energy sector manager, with extensive energy-efficiency experience in the commercial sector. For more than 20 years, Ms. Broughton has worked with investor-owned, municipal, and cooperative utilities. She identifies commercial and industrial (C&I) market needs and helps utilities develop and implement programs to meet them. For Cadmus' Energy Services Division, Ms. Broughton provides program management expertise as well as her knowledge of critical utility C&I customers that include national retail chains, higher education, and property management sectors.

Ms. Broughton holds a master's degree in human consciousness studies from John F. Kennedy University, and a bachelor's degree in architecture from University of Texas, Austin.

Brad Acker, Analyst, Cadmus

Brad Acker, an analyst with Cadmus, is a professional engineer in the state of Idaho and has worked as a mechanical engineer for the past twenty years. He was employed at the University of Idaho for ten years. While at the university, he was an energy efficiency researcher in the Integrated Design Lab and worked with regional utilities and utility partners.

Brad has an undergraduate Mechanical Engineering degree from Montana State University in Bozeman and a Master's degree in Engineering from the University of Idaho.

Brad Pierce, Vice President (Principal I), Nexant

Brad Pierce is a Vice President in Nexant's Utility Services business unit located in the Salt Lake City, UT office. He manages a litany of business process services including physical application handling/retention, application processing, incentive fulfillment, check processing, customer service, and

outbound sales campaigns. Under Brad's leadership over the last five years, Nexant has processed and issued incentive checks totaling more than \$400 million with 99.956% accuracy. In 2017, Brad started an initiative to deliver rebate checks faster than anyone in the industry. Today, over 95% of all applications are processed with sent checks in less than one week, minus client funding. Brad has more than 19 years of experience developing and managing operations and customer service environments.

Bradley Jones, Senior Analyst, Cadmus

Bradley Jones, a senior analyst with Cadmus, has experience with project coordination, recruiting and scheduling, survey and interview design, and data collection and analysis. In addition, Bradley conducts quality assurance reviews of major deliverables and edits internal and external documents. Bradley has experience working with a wide variety of clients including the Wisconsin Focus on Energy Program, EmPOWER Maryland, the Massachusetts Cool Smart Program, Dayton Power & Light, Silicon Valley Power, NYSERDA, Vectren Indiana, Indianapolis Power & Light, Entergy Arkansas, and Con Edison.

Before joining Cadmus in 2013, Bradley composed and edited proposals, progress reports, marketing materials, and website articles for consulting and design companies.

Bradley holds a BA in English Literature from St. Lawrence University.

Brian Albert, PE; Vice President (Principal I); Nexant

Brian Albert currently oversees the Energy Efficiency Delivery (EED) team in Nexant's Madison, WI; Des Moines, IA; and Louisville, CO offices. He provides program management and technical support to major energy efficiency programs. His expertise includes managing utility-sponsored demand side management (DSM) programs, designing and implementing DSM programs, assessing market potential, managing and motivating trade ally networks, working with energy management information systems, and estimating energy and demand savings. Brian is the Principal-in-Charge for nonresidential programs delivered to MidAmerican Energy Company, Xcel Energy, Vectren Energy Delivery, and AEP Ohio.

Brian Evans, Senior Analyst, Cadmus

Brian Evans has six years of experience in energy program evaluation. Mr. Evans regularly leads impact studies and conducts evaluations of energy efficiency programs, including the measurement and verification of energy efficiency measure impacts in both the residential and commercial market sectors. He also has experience with sample design, statistical analysis, simulation, optimization, and programming.

Before joining Cadmus in 2015, Brian worked at TecMarketWorks as an energy systems engineer. He holds a Master's degree in Industrial and Systems Engineering from the University of Wisconsin – Madison.

Brian Hedman, Executive Director, Cadmus

Brian Hedman is an executive director at Cadmus, with more than 30 years of experience in the energy industry. Since joining Cadmus in 2002, he has managed more than 100 energy-efficiency and DSM-related projects, ranging from evaluation of residential and small commercial incentive programs to studies for large commercial and industrial custom programs.

Before joining Cadmus in 2002, Mr. Hedman was employed at PacifiCorp for 20 years, where he held a variety of regulatory and DSM-related positions, including manager of Rates and Regulation, manager of Demand Side Management Policy, and manager of Integrated Resource Planning. He led the development of PacifiCorp's 6th IRP, RAMPP-6, and he was a member of the company's Environmental Policy Advisory Committee, where he was responsible for establishing policy and gaining regulatory approval for PacifiCorp's energy-efficiency programs.

Mr. Hedman holds a Bachelor degree in Business Administration from the University of Washington and a Master's degree in Economics from Portland State University. He has been published in *The Electricity Journal* and *Public Utilities Fortnightly*.

Brian Pizzi, Research Analyst, Cadmus

Brian Pizzi, a laboratory technician at Cadmus, is responsible for all meter leasing logistics. He also works on projects related to remote metering and data acquisition. Mr. Pizzi is proficient with SQL, R, and bash scripting in the Linux OS environment. He has used these tools to automate querying, cleaning, and reshaping of data for advanced processing.

Mr. Pizzi holds a bachelor's degree in economics and a master's degree in sustainability sciences from University of Massachusetts Amherst.

Caleb Wisch, Engineering Technician, Cadmus

Caleb Wisch, an engineering technician with Cadmus since September 2012, is involved in both the day to day running of Cadmus' Engineering Laboratory and the movement of Cadmus' metering equipment. With over \$3 million worth of equipment moving in and out of the lab, he is in charge of ensuring that Cadmus' equipment database remains accurate as equipment is shipped back and forth across the United States. He also oversees the day-to-day organization and maintenance of the equipment in the laboratory.

In addition, Caleb has been involved with various special projects undertaken in the lab, ranging from studies of the waste heat factor of recessed light fixtures to the effect that switching lights on and off has on the lifespan of a bulb. Other projects include working with ENERGY STAR to design efficiency standards for computer graphics cards and gaming consoles.

Casey Stevens, Senior Analyst, Cadmus

Casey Stevens is a senior analyst on the Statistical and Economic Analysis team at Cadmus. Ms. Stevens specializes in using applied statistics to evaluate energy efficiency programs. She has experience in sample design, ratio estimation, regression analysis, and uncertainty quantification.

Prior to joining Cadmus, Ms. Stevens earned her master's degree in statistics at Oregon State University, focusing on employing statistical, economic, and environmental methods to study and analyze survey data on barriers to adopting sustainable energy practices.

Charles Bicknell, Senior Vice President, Nexant

Charles Bicknell is a Senior Vice President in Nexant's Utility Services business unit leading the Strategy and Planning (S&P) consulting practice. Charles joined Nexant from the Cadmus Group, where he was a Vice President with the energy sector, led the analytics group, and acted as principal investigator on some

of Cadmus' largest evaluation and energy efficiency potential studies. His expertise includes economic and financial analysis of energy efficiency programs and data-driven approaches for demand side management (DSM) program optimization. Charles' background is in financial analysis and modeling, and his experience includes work in the investment banking industry.

Cheryl Winch, Senior Associate, Cadmus

Cheryl Winch, a senior associate at Cadmus, provides leadership in the areas of research design, project consulting and management, survey design, sampling, statistical analysis, and report writing and presentation focused on demand-side management, renewable energy, and other sustainability efforts for utility and energy organization clients. Her areas of expertise include process and impact program evaluation, behavioral aspects of energy use, messaging, marketing communications, and qualitative research methods.

Before joining Cadmus, Ms. Winch served as a market research analyst for Xcel Energy. There, her responsibilities on various research projects included customer satisfaction, program evaluation, benchmarking, pricing research, new product concept testing, advertising testing and tracking, qualitative focus groups and customer panels, internet usability testing, residential segmentation, online surveys, and data analysis.

Ms. Winch holds a master's degree in educational psychology from the University of Minnesota and a bachelor's degree in psychology and philosophy from Bethel University.

Christie Amero, Associate, Cadmus

Christie Amero, an Associate at Cadmus with over five years of experience in the energy efficiency field, provides expertise in engineering site visits, building commissioning, quantitative data analysis, electrical power metering, and industrial and commercial energy efficiency measures.

Before joining Cadmus, Ms. Amero was a senior engineer at DMI, Inc., an energy consulting company based out of Massachusetts, where she served as the project manager for commercial and industrial sites in the Boston area, performed LEED commissioning activities, technical assistance studies, and impact evaluations, and managed program implementation and policy-related projects.

Christie holds a BS in mechanical engineering from Northeastern University and the LEED Accredited Professional certification in building design and construction from the USGBC.

Colton Bushey, Research Analyst, Cadmus

Colton Bushey, a Research Analyst at Cadmus, where his roles include general office management along with budgeting for Focus on Energy operations. He is proficient in C, Java, Html, and Stata. Before joining Cadmus in 2019, Colton worked at Aglytix as a software engineer. Colton holds a Bachelor's of Science in both electrical engineering and economics from the University of Wisconsin-Madison.

Daniel Scognamiglio, Senior Analyst, Cadmus

Dan Scognamiglio, a senior analyst at Cadmus, is a graduate of William Paterson University with a B.A. in Communications. Dan officially joined Cadmus in September 2014 after working as an I.T. consultant. He develops FileMaker databases for a wide array of projects within Energy Services; perhaps

most notably for the NYSERDA PVQuest solar inspection project. He has tested, deployed, upgraded, and performed large scale data imports and exports for FileMaker driven iPad and web-based data collection tools. Additionally, he assisted with the enterprise-wide rollout of SharePoint 2013. When not developing FileMaker databases he still supports the Cadmus SharePoint team at all levels- including the creation of SharePoint apps that complement the goals of FileMaker driven projects.

Before joining Cadmus, Dan worked with Johnson & Johnson at their world headquarters in New Brunswick, NJ and in various supporting operating companies throughout the state. His projects there ranged from enterprise-wide diversity reporting to maintaining metrics databases for training and compliance. While assembling and coordinating compliance data between all U.S. divisions of the company he reported directly to the Vice President of Healthcare Compliance, Elizabeth Forminard.

Danielle Burns, Senior Associate, Cadmus

Danielle Burns, a senior associate with Cadmus, has six years of experience providing renewable energy and environmental consulting services to state and local governments. Danielle provides solar procurement technical assistance to Massachusetts municipalities pursuing solar projects; she supports clients at stakeholder meetings, explains the benefits and risks of solar with respect to financing, policy, and technical specifications, and conducts contract negotiations. Danielle also manages a number of projects for state clients, and is the Cadmus proposal manager for renewable energy opportunities.

Previously at Cadmus, Danielle supported Cadmus' contract with the U.S. Environmental Protection Agency's Drinking Water Protection Division. Before joining Cadmus in 2010, Danielle worked for a third-party firm analyzing claims against the Massachusetts petroleum storage tank fund to determine technical and financial eligibility.

Danielle holds a BA in environmental analysis and policy from Boston University and a MA in economic and social development of regions from the University of Massachusetts.

Danielle Kolp, Senior Associate, Cadmus

Danielle Kolp, a senior associate and project manager at Cadmus, has over ten years of experience with data analysis and project management. At Cadmus, Ms. Kolp has performed and managed numerous impact and process evaluations, cost-effectiveness analyses, potential assessments, program planning projects as well as renewable energy program planning and evaluation, specializing in solar photovoltaics.

Ms. Kolp's specific renewables experience at Cadmus began in 2009 when she assisted IPL in creating their first renewables program by determining the cost-effectiveness of several renewable technologies, setting incentive levels, estimating participation, and creating a spreadsheet tool that inspectors utilized to determine if a site was suitable for PV or wind and met payback requirements. Ms. Kolp has performed analysis on the solar PV potential over five states for PacifiCorp, using several technical and market characteristics to determine an achievable and realistic capacity for rooftop PV. She also recently assisted in a PV potential study for Seattle City Light.

Ms. Kolp has a master's degree in Environmental Science and Management from the Bren School at the University of California, Santa Barbara, and she holds bachelor's degrees in mathematics and natural science, with a physics emphasis, from the University of Puget Sound.

David Ladd, Senior Analyst, Cadmus

David Ladd has three years of experience in energy program evaluation and twenty years of experience in quantitative and qualitative research. Mr. Ladd's role in evaluations includes collaborating on the design of studies and analysis algorithms, writing and reviewing survey instruments, sampling, overseeing survey fieldwork, data quality verification, statistical analysis, free-ridership calculations, process report writing and presentations. He has co-authored more than thirty evaluation reports for residential and non-residential programs including lighting, air sealing, HVAC and water measures, as well as behavior change, appliance recycling, home audit, demand reduction, low-income and school-based programs.

Before joining Cadmus in 2015, David served as the lead Process Evaluation Analyst for TecMarket Works. David has a Master of Science degree in sociology from the University of Michigan, and a Bachelor of Science degree in the same field from the University of Wisconsin-Madison.

David Molner, Senior Analyst, Cadmus

David Molner, a senior analyst with Cadmus, works in the Energy Services Division, where he has conducted a number of impact and process evaluations that include participant and nonparticipant surveys, measure and program level savings reviews, and installation review site visits. Mr. Molner also has worked on multiple portfolio level analyses that include verifying annual savings and modeling the economic impacts of implementing utility energy efficiency program portfolios. Before joining Cadmus, Mr. Molner worked in the government relations division at a non-profit for school administrators, where he contributed to educational policy decisions and provided updated information to members, legislators, and other key education stakeholders.

Mr. Molner holds a bachelor's degree in political science and a minor in economics from Western Michigan University.

David Tripamer, Senior Analyst, Cadmus

David Tripamer, a senior analyst with Cadmus, works on the planning and assessment team of the Energy Services Division. Mr. Tripamer has supported impact and process evaluations for PPL, Oncor, IPL, Vectren, and Entergy Arkansas. Before joining Cadmus, Mr. Tripamer was an engineering intern at Meritor Inc. where he designed improvements to their assembly line.

Mr. Tripamer holds a bachelor's degree in mechanical engineering from Clemson University.

Diane Sisk, Technical Editor, Cadmus

Diane Sisk, a technical editor and proposal specialist at Cadmus, collaborates with staff at all levels to produce deliverables and proposals for contracts ranging from \$50,000 to \$2 million. Ms. Sisk copyedits a variety of technical and business documents for internal and external use, reports, articles, and other materials developed for technical and nontechnical audiences. She has a bachelor's degree in English and is currently completing a professional editing certification through UC Berkley.

Ms. Sisk has more than 18 years of experience in marketing communications and business development, researching, writing, and editing a wide range of technical documents and marketing materials. Before joining Cadmus, Ms. Sisk was a proposal writer and editor at an environmental engineering firm, copyediting white papers, publications, and other communications material.

Dylan Vaughn, Analyst, Cadmus

Dylan Vaughn, an analyst, joined Cadmus at the beginning of 2016. Dylan's background in economics allows him to provide crucial support to managing and conducting quantitative analyses. He has provided support to desk reviews, uplift analyses, billing analyses, and baseline research.

For uplift analyses, Dylan disaggregates energy savings for utility customers in multiple energy efficiency programs to ensure that savings are properly ascribed to each program. In impact analyses, Dylan tracks data prior to and following program implementation in order to calculate the program's energy and demand savings. His baseline research offers project managers information necessary to developing reasonable assumptions in project evaluations. Dylan has also worked on project coordination, tracking budgets, and ensuring proper workflow. He has also supported report verification efforts by working to ensure that all reported values are properly derived.

While an undergraduate student, Dylan analyzed oil and gas firms' yearly financial reports to build databases to serve future academic research.

Elena Kazarov, Senior Analyst, Cadmus

Elena Kazarov, a senior analyst in Cadmus' Energy Services Sector, specializes in residential impact analysis and evaluation. She assesses residential energy efficiency measures and programs and performs cost-effectiveness and net-to-gross analyses, as well as conducts process evaluations for utilities across the United States. Prior to joining Cadmus, Ms. Kazarov worked in climate policy and advocacy through various positions at nonprofits and academia such as the Natural Resources Defense Council, the Sierra Club, and Duke University.

Ms. Kazarov holds a master's degree in environmental management from Duke University and completed her undergraduate studies in environmental studies and economics at Washington University in St. Louis.

Elissa Slocum, Associate, Cadmus

Elissa Slocum, an associate with Cadmus, offers expertise in energy efficiency program marketing, market research, marketing analytics, and marketing evaluation. Ms. Slocum currently serves as project manager for the Massachusetts Lighting and Consumer Products Initiative, which markets energy-efficient lighting, consumer electronics, appliances, and appliance recycling to residential customers of electric utility and energy efficiency service providers. Her use of data-driven marketing techniques, such as Google Analytics and performance dashboards, has helped to increase program performance and impact.

Ms. Slocum holds an M.B.A. with a Concentration in Socially Responsible Business and a Specialization in Marketing from Brandeis International Business School, and a B.A. in Anthropology and International Relations from Connecticut College.

Elizabeth Rollins, Engineering Technician, Cadmus

Elizabeth Rollins is a scheduler at Cadmus. Elizabeth received her Master of Science degree in Marine Resource Management. She worked for 5 years as Program Director, among many other titles, at Marine Discovery Tours, a tourism and education company on the Oregon Coast.

Elliot Himmelfarb, Senior Analyst, Cadmus

Elliot Himmelfarb, a junior application developer with Cadmus, contributes to the development of the Wisconsin Focus on Energy reporting website, providing support through his experience with web development and the MongoDB, Express, Angular, and Node (MEAN) full-stack JavaScript framework. He is a member of the Data Solutions Team and in the Boulder, CO office and also supports WI FOE backend data management as it comes in from field. Before joining Cadmus, Elliot graduated a 14-week, full immersion, full-stack JavaScript coding boot camp after spending two years in South Korea as an English Teacher. Elliot was a self-taught programmer of one-and-a-half years prior to attending his coding boot camp, exploring the worlds of Python, C++, and Java before devoting himself to web technologies with JavaScript, HTML, and CSS.

Elliot holds a bachelor's degree in Cultural and Archaeological Anthropology from the University of Oregon and a portfolio of full-stack, modern web applications built during his time at Coding House, Full-Immersion Coding Boot Camp.

Emily Miller, Senior Associate, Cadmus

Emily Miller, a Cadmus senior associate, has several years' experience specializing in the energy industry, land conservation, and corporate sustainability sectors. Ms. Miller is also a skilled research analyst who has conducted studies regarding market barriers, market feasibility, and program effectiveness. In her current role, she focuses on process evaluations of energy-efficiency programs for energy companies, utilities, and governments. Ms. Miller's focus is in the areas of commercial and industrial programs, municipal or community-based energy efficiency programs, and residential new construction. For example, Ms. Miller leads the process evaluation for four commercial and industrial programs in Arkansas, a multi-year evaluation that has resulted in actionable recommendations.

Before joining Cadmus in 2012, Ms. Miller negotiated and managed conservation real estate transactions for The Trust for Public Land. These efforts resulted in protecting thousands of acres of land valued at over \$30 million. At the National Renewable Energy Laboratory, Ms. Miller advised local governments on strategic energy planning and developed content for the internationally collaborated Clean Energy Solutions Center.

Ms. Miller holds a master of business administration and a Master's of Science degree in environmental studies from the University of Colorado. She also holds a bachelor's degree in French and Francophone studies from Carleton College.

Emily Shackleton, Engineering Technician, Cadmus

Emily Shackleton works as a Field Technician in the Cadmus Energy Services division where she has dedicated most of her time to utility impact evaluations. Before joining Cadmus, Ms. Shackleton worked as a project engineer at Demand Management Institute (DMI) where she provided energy modeling services, commissioning, impact evaluations, and design reviews for utility companies as well as other commercial and industrial clientele.

Ms. Shackleton holds a bachelor's degree in mechanical engineering from Olin College of Engineering.

Eugenia Preston, Analyst, Cadmus

Nina Preston, an analyst in the GHG and Sustainability Reporting practice in Cadmus' Energy Sector, supports numerous client companies with CDP response and greenhouse gas (GHG) inventories, as well as with other GHG and sustainability services, such as GRI reporting, EcoVadis reporting, Climate Action Plan development, and corporate sustainability assessment. In addition, Ms. Preston provides support and project management to the U.S. Environmental Protection Agency's Center for Corporate Climate Leadership. Prior to working at Cadmus, Ms. Preston was a research assistant to the Environmental Studies department chair at Washington & Lee University, where she conducted field research, provided ongoing literature reviews, and analyzed and synthesized data.

Evan Hatteberg, Senior Analyst, Cadmus

Evan Hatteberg, a senior analyst at Cadmus, provides quantitative analysis on a range of projects for the planning and assessment team in the Utility Solutions Group. Mr. Hatteberg focuses primarily on cost-effectiveness and demand-side management.

Prior to working at Cadmus, Mr. Hatteberg was pursuing his studies at Oregon State University. For his master's in public policy, he concentrated on energy efficiency, quantitative methodology, and energy policy and wrote his thesis on the use of electric resistance heating systems in multifamily homes. Mr. Hatteberg worked as a graduate assistant for the head of his program's energy concentration and researched renewable energy siting and energy commissions.

Gina Henderson, Associate, Cadmus

Gina Henderson, an associate with Cadmus, assists clients of the Energy Services Division with program planning and evaluation, involving both impact and process analysis. Ms. Henderson uses SQL, SAS, Microsoft Excel and Microsoft Visual Basic to manage and analyze data from various sources and to develop planning and reporting tools. She also has experience developing survey instruments and interview guides and distilling valuable information from resulting data.

Before joining Cadmus in April 2012, Ms. Henderson worked as an actuarial analyst at Standard Insurance Company, where she was responsible for a wide variety of financial analysis and reporting, data management, and database development.

Grant Jacobsen, Principal, Cadmus

Grant Jacobsen, Ph.D., is a senior economist in the Statistical and Economic Analysis team at Cadmus. He specializes in statistical and econometric evaluations of behavioral programs, energy efficiency programs, and demand response programs.

Dr. Jacobsen is also an associate professor at the University of Oregon. In his academic research, he has addressed topics related to renewable energy, energy efficiency, air pollution, extraction of natural gas and oil, carbon offsets, and climate change awareness. He has published articles in leading peer-reviewed journals, such as the *Review of Economics and Statistics* and the *Economic Journal*. He teaches courses on quantitative methods, environmental policy, and climate change policy.

Hanna Lee, Associate, Cadmus

Hanna Lee is an associate in Cadmus' Energy Services Division. As a member of the market research team, she conducts primary and secondary research and analyzes qualitative and quantitative data in support of energy-efficiency program evaluations. Ms. Lee specializes in social science research methods and has more than three years of experience with behavior change program design, implementation, and evaluation.

Before joining Cadmus, Ms. Lee was a research assistant in the Human Dimensions of Natural Resource Management Lab at the University of Washington. She managed and supported projects assessing the social acceptability of wood-based bioenergy development. In support of these projects, she developed survey and interview guides, moderated focus groups, and administered surveys.

Ms. Lee holds a BS in environmental science from the University of Maryland, College Park and a MS in environmental and forest sciences from the University of Washington.

Heidi Javanbakht, Senior Associate, Cadmus

Ms. Javanbakht has over six years of experience with commercial and industrial SEM. At present, she is managing the SEM evaluation for BPA's industrial energy management program and serving as a technical advisor and support for SEM evaluations for PPL Electric Utilities' Continuous Energy Improvement Program, Energy Trust of Oregon's Production Efficiency SEM Program, and PacifiCorp's Watt Smart energy management programs. Recently, Ms. Javanbakht assisted NEEA in verifying the energy savings of their commercial real estate SEM cohorts, measuring adoption of SEM practices, and measuring the savings persistence for these cohorts. Ms. Javanbakht is part of the team implementing PSE's Multifamily SEM pilot program, leading the measurement and verification task. She is also a member of the NW SEM Collaborative Leadership Team.

Hope Lobkowicz, Senior Associate, Cadmus

Hope Lobkowicz, a senior associate with The Cadmus Group, Inc., has over seven years of professional experience working on topics relating to energy efficiency, renewable energy, and climate change mitigation and adaptation. In her role in the Program and Market Analysis Group at Cadmus, she focuses on designing and improving energy efficiency programs for energy companies, utilities, governments, and non-profit organizations using market research, communications, and evaluation tools. Ms. Lobkowicz has experience conducting market assessments, process evaluations, and best practice reviews for residential and commercial building programs.

Before joining Cadmus, Ms. Lobkowicz worked in energy and climate policy and research at the Pew Charitable Trusts, the U.S. Green Building Council, and most recently, as a sole proprietor. Her experience in Washington, DC entailed working on technical legislative issues such as fiscal policy for energy efficiency, the American Recovery and Reinvestment Act (ARRA), corporate fuel economy standards, and federal incentive programs for energy efficient commercial and residential buildings. In addition to her work on domestic policies and programs, Ms. Lobkowicz has participated extensively in global forums on climate change. She has managed the engagement of USGBC and the Pew Charitable Trusts with the Department of State at multiple meetings of the UN Framework Convention on Climate Change, including Conferences of the Parties in Indonesia, Poland, Mexico, and South Africa.

Ms. Lobkowitz holds a Master's in Environmental and Resource Policy from The George Washington University and a Bachelor's in Psychology from St. Mary's College of Maryland.

Ian Nimmo, Engineering Technician, Cadmus

Ian Nimmo, an engineering technician with Cadmus utilizes his skills in customer service and energy auditing to gather all data relevant to residential home energy consumption. He recently stepped into a new role as a field coordinator and is responsible for coordinating and managing field work for Cadmus' Energy Services Sector. Prior to Cadmus, Mr. Nimmo worked as a project manager for a commercial utility rebate program. In this role, he worked in three counties in rural California helping commercial businesses get updated equipment to save on energy costs. Mr. Nimmo holds a B.A. in International Political Economy from the University of Puget Sound.

Jaclyn Rambarran, Analyst, Cadmus

As an analyst at Cadmus, Jaclyn Rambarran is experienced in data collection, analysis, and project management for numerous energy measurement and verification efforts. Prior to coming to Cadmus, Ms. Rambarran worked at the Environmental Defense Fund, participating in the Clean Energy team's policy efforts towards advancing the energy-water nexus, modernizing the power grid, cutting energy waste, and empowering utility customers to make smart energy choices.

Ms. Rambarran holds a bachelor's degree in mechanical engineering and a certificate in Sustainable Energy from Princeton University.

James Kennedy, Associate, Cadmus

James Kennedy, an associate at Cadmus, performs a wide range of functions from managing energy monitoring systems, developing computational data processing, and producing numerical results and recommendations for clients. His specialties include power frequency analysis, multiple-criteria decision making, energy efficiency assessments, carbon abatement calculations, and profitability assessments for major capital investments. He has experience performing audits on single-family residences, evaluating central HVAC plants for commercial institutions, writing probabilistic market simulations, and designing control systems using programmable logic controllers. Before joining Cadmus, he worked as a process engineer for a specialty chemical plant and led research on design modifications to biomass power plants.

Mr. Kennedy holds a Six Sigma Green Belt, is a certified Engineer in Training, and received a bachelor's degree in engineering from Dartmouth College.

Jane Colby, Principal, Cadmus

At Cadmus, Jane Colby, Principal, manages program and portfolio evaluations, energy efficiency potential assessments, and planning studies. Ms. Colby leads the residential process evaluation team and has over 20 years of leadership experience in the energy industry, in which she has conducted project management, research and analysis, negotiation, evaluations, and implementation energy efficiency programs. She is skilled at conceptualizing, planning, and organizing research projects, and at analyzing and presenting complex data.

Before joining Cadmus in 2009, Ms. Colby was a consultant advising small businesses on marketing and strategic planning. In her five-year tenure as senior vice president and manager for El Paso Merchant

Energy, she developed, negotiated, and managed the execution of complex power transactions involving power assets and long-term contracts. Ms. Colby's previous experience includes working for Barakat & Chamberlin, Inc., where she consulted with utilities on marketing and energy efficiency; this included working on-site at NYSEG to develop and implement a strategic marketing plan. She also worked for Xcel Energy in various capacities, including wholesale trading and scheduling manager, loads and resources planning manager, DSM manager, market analyst, and project engineer. She was extensively involved at Xcel Energy in managing a non-residential DSM bidding program and conducting integrated resource planning.

Jason Christensen, Senior Associate, Cadmus

Jason Christensen, a senior associate at Cadmus, manages and conducts complex quantitative analyses for program planning and evaluation, with particular emphasis on econometric methods and research design. His expertise includes multiple regression analysis, ANOVA, and non-linear models. Mr. Christensen's professional impact evaluation experience has emphasized price elasticity modeling, meter data analysis, behavioral programs, and billing analysis.

Recently, using implementer tracking data, for a number of clients, Mr. Christensen has applied an econometric approach to estimating freeridership in upstream lighting programs. This approach to estimating the sales lift attributable to the program, which draws on point-of-sale and marketing data to provide data-driven estimates of program lift. These projects involve developing analysis plans and working with implementers to improve data collection activities.

Mr. Christensen holds a B.S. in Economics from Portland State University.

Jeana Swedenburg, Senior Associate, Cadmus

Jeana Swedenburg, a Cadmus senior associate, has extensive experience managing a broad range of process and impact evaluations and is proficient in conducting both quantitative and qualitative data analysis for complex residential and public-sector energy-efficiency programs. Ms. Swedenburg is a skilled communicator and is experienced leading large teams to deliver quality program evaluations for clients across the United States.

Ms. Swedenburg's areas of expertise include project coordination and management, survey design, interviewing, secondary data review, and assessment of non-energy benefits and behavior change. In managing and conducting evaluations of low-income programs, Ms. Swedenburg has worked with a variety of stakeholders—including community groups, regulatory agencies, implementation organizations, and utilities—to develop process improvements for program implementation. Recently, Ms. Swedenburg has managed evaluation activities for low-income programs in Washington, Massachusetts, California, Missouri, and Rhode Island.

Ms. Swedenburg holds a bachelor's degree in business management from Clemson University and studied international business at the University of Nicosia in Nicosia, Cyprus.

Jeff Abromowitz, Analyst, Cadmus

Jeff Abromowitz works as an Analyst in the Cadmus Energy Services division where he has contributed to work on utility energy efficiency potential studies and evaluations. Before joining Cadmus, Mr.

Abromowitz was a solar energy designer with SolarCity where he developed the plans for hundreds of residential solar photovoltaic systems for homes across the United States.

Mr. Abromowitz holds a bachelor's degree in mechanical engineering from the University of Michigan and a master's degree from the University of Colorado at Boulder.

Jeff Cropp, Principal, Cadmus

Jeff Cropp, a principal with Cadmus, provides expertise in project management, on-site measurement and verification, and engineering analysis. He has a diverse background in engineering and in the design and installation of photovoltaic and solar thermal systems. Mr. Cropp has a M.S. in Electrical Engineering and a B.S. in Mechanical Engineering, from the University of Cincinnati, Ohio. Jeff is an Oregon Professional Engineer in Mechanical Engineering.

Mr. Cropp has managed and performed engineering analysis on commercial and industrial impact evaluations for various Cadmus clients including: Commercial and industrial impact evaluation for the Energy Trust of Oregon 2010-2011 New Buildings Program; Impact evaluation for the 2012-2013 portfolio of commercial and industrial energy-efficiency programs for Avista in Idaho and Washington; Commercial and industrial impact evaluation for the Salt River Project (SRP) 2013 New Construction, Retrocommissioning, and Small Business Direct Install Programs; Commercial and industrial impact evaluations for the 2012-2013 Entergy Arkansas Custom, CitySmart, and Agricultural programs; and most recently the Impact evaluation for the 2012-2013 Southwestern Power Company Commercial and Industrial Energy Efficiency Program (CIEEP).

Jenna Lipscomb, Associate, Cadmus

Jenna Lipscomb, an associate with Cadmus, works on the High Performance Buildings team of the Energy Services Division, where she lends her experience in the built environment on a wide variety of services. She guides clients through the LEED for Existing Buildings, LEED for New Construction, and LEED for Commercial Interiors processes, often incorporating the development of construction specifications, and the coordination of management teams to uncover increased energy efficiency opportunities. Jenna conducts project management, field work and analysis for sustainable and energy efficient building design and operation, energy auditing, decommissioning and computer-aided design and building performance simulation of projects.

Jenna holds an MBA from the University of Colorado, a B.A. in Environmental Science from The Colorado College, and holds a CEM (Certified Energy Manager) accreditation from the Association of Energy Engineers.

Jennifer Hockett, Senior Associate, Cadmus

Jennifer Hockett, a Cadmus senior associate, performs complex quantitative sampling and analysis for energy efficiency program planning and evaluation. She is experienced in survey sample design and analysis, regression analysis, and stochastic modeling and simulation. Dr. Hockett's experience includes optimization of sample designs according to confidence and precision targets for load research studies, within energy efficiency programs and across portfolios, including a variety of sample designs such as simple random sampling, stratified sampling, cluster sampling, and multi-stage sampling. She uses statistical methods to account for uncertainty and cost in sample size calculations as well as finite

population corrections for small populations. She has analyzed reported and verified savings data in order to make inferences about savings across the population of participants utilizing sampling weights to account for stratification and cluster sampling. She recently developed a complex variance estimate for a Northeast Energy Efficiency Partnership study that estimated savings load shapes associated with variable speed drive installations. Dr. Hockett has experience in task and program management as a technical lead as well as overseeing budgets and scheduling.

Dr. Hockett holds a doctorate and master's degree in statistics from Iowa State University and a bachelor's degree in mathematics from the New Mexico Institute of Mining and Technology.

Jeremy Eckstein, Associate, Cadmus

Jeremy Eckstein, an Associate in Cadmus' Energy Services Division, conducts quantitative and qualitative data analysis for a broad range of energy-industry projects. He has performed energy-efficiency program process evaluations, built a Microsoft Excel-based conservation potential model for a Pacific Northwest utility, and has contributed program recommendations for a wide variety of energy efficiency programs.

Before joining Cadmus Jeremy conducted market analysis for emerging wave energy technologies for the Oregon Wave Energy Trust. Jeremy holds a Master's degree in public policy from Oregon State University, where he studied the integration of variable energy resources into the Pacific Northwest power grid. Prior to pursuing his interests in renewable energy and energy efficiency Jeremy worked as program manager and evaluation consultant in the international development sector.

Jessica Lorenz, Senior Associate, Cadmus

Jessica Lorenz is a seasoned marketing specialist and project manager who has supported and managed projects for ENERGY STAR for nearly 9 years. Accomplishment include: 1) Lead for planning and implementing the yearly social media driven ENERGY STAR Rule Your Attic campaign that began in 2014 and continues to the present. This effort also leverages partner relationships and promotes content through paid advertising. (2) Project lead for managing the ENERGY STAR New Homes Better is Better messaging platform and supporting materials (videos, brochures, banners, web content, and social media content) between 2011 and 2014. (3) Project lead for ENERGY STAR Lighting Sales and Marketing support from 2015 to present. Work includes development of online light tools, quarterly newsletters, oversight of Spanish translation work, partner coordination, and meeting session planning.

Jill Krueger, Associate, Cadmus

Jill Krueger, an associate with Cadmus, is an experienced program and project manager, and she brings hands-on energy-efficiency experience to the firm's Energy Services Division. Her expertise encompasses conducting HVAC process evaluation work, leading residential HVAC market research, developing and implementing program/project plans, and managing relationships with trade allies. She also has experience leading survey teams and technical research efforts.

Before joining Cadmus in 2012, Ms. Krueger spent six years managing residential and commercial prescriptive HVAC programs for an energy-efficiency implementation and administration company in the Midwest. In this role, she led numerous HVAC energy-efficiency programs and projects through every phase of their lifecycle, from creation to closeout.

Ms. Krueger holds a BA in English from Illinois State University.

Jim Jolley, Senior Associate, Cadmus

Mr. James W. Jolley, P.E, Senior Civil/Environmental Engineer, has 28 experience in water/wastewater engineering, environmental assessment, environmental permitting and regulatory compliance for public and private clients in the energy, manufacturing, transportation, agricultural sectors. Mr. Jolley has completed several evaluations of the processing, disposal and potential reuse of biosolids from water and wastewater treatment facilities. Most recently, Mr. Jolley has assisted the Rhode Island Commerce Corporation in developing minimum technical requirements, a protocol and checklist for the evaluation and review of proposed anaerobic digestion technologies for the beneficial reuse of biomass including food wastes.

Mr. Jolley holds a B.S. in Civil Engineering from the University of Washington, and an M.S. in Civil/Environmental Engineering from the University of Maine. He registered as a professional engineer in Rhode Island, Massachusetts, New Mexico and New York.

Jim Stewart, Principal, Cadmus

Dr. James Stewart, a principal economist and co-manager of the statistical analysis group at Cadmus, specializes in the application of econometrics and statistics to the evaluation of behavior-based and demand response DSM programs. Dr. Stewart is co-author of the U.S. Department of Energy's Uniform Methods Project Behavior-Based Program Evaluation Protocols (2015) and the forthcoming Strategic Energy Management Program Evaluation Protocols. His research has been published in peer-reviewed journals and focuses on household decision-making and behavior, collective action problems, and market diffusion of technologies and products.

Dr. Stewart holds a Ph.D. in economics from Northwestern University and a B.A. in economics from the University of Pennsylvania. Before joining Cadmus, he was assistant professor of economics at Reed College in Portland, Oregon.

Joe Van Clock, Senior Analyst, Apex Analytics

Mr. Van Clock is a Senior Analyst at Apex Analytics, where he draws on a broad base of DSM program knowledge from more than ten years of program evaluation and market research experience. He has managed and carried out multiple studies involving in-depth interviews, focus groups, and observational research. In addition to qualitative data collection and analysis, Joe conducts best practices and benchmarking studies, manages projects involving multiple data collection approaches, and synthesizes findings from multiple data sources. Before joining Apex, Joe was a Senior Consultant at Research Into Action where he contributed to and managed a wide range of program evaluation and market research projects, including research into consumer reactions to innovative, time-varying rates. He also developed expertise in energy efficiency financing approaches and led evaluations of programs providing financing to support single-family residential retrofits and low-income manufactured home replacements.

Joel Zahlan, Associate, Cadmus

Joel Zahlan, an associate with Cadmus, has a Ph.D. in Industrial Engineering with a focus on industrial/commercial energy and process optimization. He is highly experienced in conducting on-site energy and process assessments at small to medium-sized industrial facilities. He also has broad

experience in conducting evaluations, feasibility studies, sensitivity analysis, and benchmarking on implemented energy and process saving measures. Dr. Zahlan has worked on over 150 energy efficiency and process improvement projects, resulting in savings of over \$30 million annually.

Before joining Cadmus in 2014, Dr. Zahlan was the team lead and project manager at the U.S. Department of Energy Industrial Assessment Center at University of Miami, where he led over 90 on-site energy assessments at small to medium-sized industrial facilities.

Dr. Zahlan holds a B.S in Mechanical Engineering from Florida Institute of Technology, and M.S and Ph.D. in Industrial Engineering from the University of Miami.

John Kongoletos, Senior Analyst, Cadmus

John Kongoletos, a senior analyst in Cadmus' Measurement and Engineering Group, is responsible for quantitative and qualitative engineering analyses of energy efficiency. He prepares impact evaluations of energy conservation measures and processes metering datasets, conducts site measurement and verification for commercial and industrial facilities, and coordinates and leads field teams for statewide evaluation projects. Mr. Kongoletos brings a background in high performance building design, energy pathways, and a multi-disciplinary approach to sustainable energy; allowing him to manage new technology demonstrations within a variety of applications.

Before joining Cadmus, Mr. Kongoletos assisted with reliability and resiliency analyses of data centers, industrial energy procurement, biochemical and nano-material processing laboratory energy assessments, and in-situ analyses of advanced glazing systems. Mr. Kongoletos holds a bachelor's degree in Mechanical Engineering (Energy Conversion Engineering) from Massachusetts Institute of Technology, with a minor in Management from the MIT Sloan School of Management.

John Lindquist, Associate, Cadmus

John Lindquist, an associate at Cadmus, has more than 10 years of experience in developing production, reporting, and tracking database applications using Visual Basic, SQL Server and .NET technologies. Mr. Lindquist's area of emphasis at Cadmus is on enhancing, streamlining, and conducting process management of extract, transform, and load processes for database applications serving the needs of major utilities and governmental agencies.

Before joining Cadmus in 2009, Mr. Lindquist was a software engineer/programmer for various companies, including Information Handling Services, Intel, and Wells Fargo. Additionally, he was a senior analytical chemist for two environmental firms.

Mr. Lindquist has a bachelor's degree in biology from Portland State University and a certificate in applied information technology from the Information Technology Institute in Portland.

John Walczyk, Senior Associate, Cadmus

John Walczyk, a senior associate at Cadmus, has five years of experience in mechanical engineering, specifically focused on alternative energy and energy efficiency. As a part of the Cadmus engineering team, Mr. Walczyk provides planning, verification, and other demand-response and demand-side management work for various utilities including Salt River Project, San Diego Gas & Electric, Southern California Edison, and Pacific Gas & Electric.

Before joining Cadmus, Mr. Walczyk performed technical energy audits for large commercial facilities in California, funded by the major California electrical utilities. These audits resulted in recommendations for improved energy performance and efficiency, with a focus on demand response estimates and capabilities. Mr. Walczyk was one of the primary developers of the demand- response audit process for his previous employer, and he managed projects through the full series of developmental stages—from concept to audit to implementation of recommended technical improvements.

Prior to his engineering and management work in demand response, Mr. Walczyk worked for a fuel cell company where he was involved in many aspects of the research and development process, including research and testing, design of experiments, quality control, data analysis, and product design. In addition, he developed and is the primary inventor of a fuel storage system with a patent pending.

Jon Koliner, Associate, Apex

During his four-year tenure in energy efficiency, Dr. Jon Koliner has accelerated to the leading edge of data analysis and evaluation techniques. He draws on experience that spans data science, behavioral science, and physical science to quantify impacts and opportunities for energy efficiency programs. Dr. Koliner is skilled in machine learning for propensity modeling and customer segmentation, regression analysis of billing, AMI, and smart device data, and the construction of automated software tools for functions from portfolio planning to plug-level device analysis. He performs analyses in R, Python, and Julia, and is proficient with many additional software tools and programming languages.

Jon has evaluated and supported planning for a dozen smart thermostat and smart home programs, both for energy efficiency and demand response. He developed streamlined procedures to standardize impact analysis for home energy reports and conducted the analysis for multiple innovative efforts to assess program effects, from energy impacts to behavioral changes. In his analyses, Jon routinely leverages his research expertise from his doctoral and post-doctoral work.

Jon has a doctorate in Physics from UW-Madison, and bachelor's degrees in Physics and French from Arizona State University.

Jonathan Lee, Analyst, Cadmus

Jonathan Lee is an analyst in Cadmus' Energy Sector and will be providing support for various energy savings programs in both residential and commercial applications. He is experienced with test design, data collection, and statistical analysis. Mr. Lee brings expertise in heating/air conditioning systems with a particular emphasis on variable refrigerant flow systems.

Before joining Cadmus, Mr. Lee studied at the Stevens Institute of Technology, with a specialization in product development. His senior project involved microinjection molding and required him to utilize additive manufacturing techniques to prototype a biocompatible catheter tip mold. He also completed a co-op program at the Stevens Institute of Technology, with his most recent co-op at Daikin Applied where he was a project engineer for the New York HVAC Sales Office.

Kaitlyn Teppert, Analyst, Cadmus

Kaitlyn Teppert works as an Analyst in the Cadmus Energy Sector's Program Design and Implementation Support team. She has contributed to work on utility energy efficiency evaluations and focuses on

analyzing survey and interview data. Before joining Cadmus, Ms. Teppert was a master's student at the University of Michigan's School for Environment and Sustainability studying behavioral science and climate change skepticism.

Ms. Teppert holds a bachelor's degree in Mathematics and Environmental Studies from York College of Pennsylvania and a master's degree in Environmental and Sustainable Behavior, Education, and Communication from the University of Michigan.

Kari Heinrich, Associate, Cadmus

Kari Heinrich, an associate at Cadmus, provides qualitative analysis for client process evaluations. Her process evaluation experience has emphasized trade-delivered programs in the residential and commercial sectors. She currently leads process analysis for evaluations on behalf of Focus on Energy, Consumers Energy, Northern Indiana Public Service Company (NIPSCO), Indianapolis Power and Light (IPL), EmPOWER Maryland, and Empire District Electric Company of Arkansas.

Ms. Heinrich has thirteen years of prior program implementation experience, primarily as a program manager with WECC and CLEAResult. She administered and implemented multiple prescriptive and custom programs for natural gas and electric utility clients. As part of program delivery, Kari specialized in establishing and maintaining relationships with local and national electrical, renewable and mechanical trade allies and industry associations, driving market transformation by working closely with industry partners to determine effective program administration.

Ms. Heinrich holds a BA in Political Science and Journalism from the University of Wisconsin – Madison.

Katie Browning, Analyst, Cadmus

Ms. Katie C. Browning is an Analyst in Cadmus' Corporate Sustainability and Climate Resilience Practice, where she works with Fortune 500 companies on emissions quantification and sustainability planning. She has completed emissions inventories for several of the country's corporate leaders in sustainability and social responsibility. Her work has guided the companies to more robust reporting and disclosure and led to greater transparency for stakeholders and investors. She has also worked with the EPA's Center for Corporate Climate Leadership to develop a national sustainability and resilience leadership benchmarking tool to enable organizations and suppliers to measure their environmental progress against peers.

Katie Parkinson, Senior Associate, Apex Analytics

As a senior associate at Apex Analytics, Katie Parkinson manages evaluation projects and conducts quantitative and qualitative data analysis and for a broad range of projects including program evaluations, evaluation oversight, market characterization studies, and potentials assessments. She specializes in residential impact evaluations, and is currently managing the evaluation of the Residential Lighting Program for Duke Energy Progress, Appliance Recycling Program for Ontario Power Authority, and conducting evaluation oversight for Nicor Gas and several Massachusetts utilities. She has also contributed to several lighting Technical Reference Manuals, including Pennsylvania, Arkansas, and the lighting protocols in the Universal Methods Project.

Prior to joining Apex, Ms. Parkinson was an associate at the Cadmus Group, where she was responsible for the day-to-day management of three single family and multifamily programs within the 2006-2008 Residential Retrofit project for the California Public Utility Commission. Ms. Parkinson has worked in the industry since 2007, and holds bachelor's degrees in both Economics and Environmental Studies from the University of California Santa Cruz.

Kevin Coleman, Project Manager, Nexant

Kevin Coleman is a Project Manager in Nexant's Utility Services business unit located in the Madison, Wisconsin office. Kevin has more than 10 years of engineering and consulting experience, including energy analysis and energy modeling. He currently manages a team of engineers that provides detailed technical reviews and highly responsive customer support for energy efficiency programs for Vectren Energy Delivery. Kevin also leads the Smart Building Solution service team which uses advanced analytics to provide real time energy management for commercial and industrial customers, and provides next-generation retrocommissioning services for office, production, and laboratory facilities.

Kristie Rupper, Associate, Cadmus

Kristie Rupper, an associate with Cadmus, works in the Energy Services Division. She specializes in designing and implementing telephone data collection projects. Ms. Rupper has worked on market research studies, designing survey instruments, and managing data collection. Her areas of expertise include process evaluations for commercial and industrial programs.

Before joining Cadmus in 2012, Ms. Rupper worked for Discovery Research Group, where she specialized in designing and implementing telephone and online data collection projects. She provided clients with project proposals outlining best practices for survey and sample design. She then guided the implementation of data collection projects with a team of project managers and programmers. She worked on several large-scale, multi-year social policy projects focusing on program awareness, customer satisfaction, and customer retention.

Lakin Garth, Senior Associate, Cadmus

Lakin Garth, a senior associate with Cadmus, specializes in project management, client and stakeholder communication, and assessing energy-conservation potential. Lakin has managed conservation potential assessment projects for Puget Sound Energy, Snohomish Public Utility District No. 1, Colorado Spring Utilities, and Missouri River Energy Services. He has also managed other energy efficiency planning-related projects for Bonneville Power Administration, the Northwest Energy Efficiency Alliance, Energy Trust of Oregon, and the Northwest Power and Conservation Council.

Before joining Cadmus in 2012, Lakin was a senior project manager at Energy Trust of Oregon, where he managed a diverse number of projects that included cost-effectiveness analysis for reporting to stakeholders, market research, and economic analysis. Lakin's experience has led to a deep understanding of Northwest energy efficiency history, practices, and policies.

Lakin holds a BBA in international business from The University of Georgia and an MS in economics from Portland State University.

Laura James, Associate, Cadmus

Laura James, an associate with Cadmus, has more than ten years of consulting experience in the area of energy, environment, and economic development. She conducts process and impact evaluations of utility efficiency programs and survey-based research of market potential. Her particular areas of expertise include energy financing, residential lighting and whole-home residential retrofit programs.

Before joining Cadmus in 2012, Laura contributed to the design and launch of a Michigan non-profit providing energy efficiency financing options for residential and commercial projects. Laura served as operations manager for the organization for two years, responsible for all aspects of program implementation, including outreach to utilities, trade allies and other stakeholders. Laura also worked for several years in the field of international agricultural and rural development, with DAI (a USAID contractor).

Laura holds a master's degree in resource economics from Michigan State University. She speaks fluent Spanish.

Lauren Gage, Project Director, Apex Analytics

Ms. Gage is a Project Director at Apex Analytics, where she leverages her unique experience as both an evaluation consultant and an evaluation manager at a large program administrator. She has over 16 years in the energy industry, most recently as the Evaluation Lead at Bonneville Power Administration. She has extensive experience in stakeholder processes for research projects and participated in many regional and national committees, including Regional Technical Forum (voting member), SEE Action EM&V subcommittee (co-chair), IEPEC (planning committee member), and the Bonneville representative for the Conservation Resource Advisory Committee and NEEA's Cost-effectiveness Advisory Committee. Her qualitative research expertise includes survey design and implementation, stakeholder and customer interviews, best-practices studies and market assessments for multiple clients. She conducted impact evaluations for various energy efficiency programs including low-income weatherization, commercial and residential lighting, and adult and school-aged energy education. Ms. Gage holds a B.A. and M.S. in Economics from Northwestern University (*Magna Cum Laude*) and Portland State University, respectively.

Leslie Anderson, Technical Editor, Cadmus

Leslie Anderson, a technical editor and proposal specialist in Cadmus' Portland office for four years, has more than 25 years of experience with environmental and engineering consulting firms. Ms. Anderson edits and publishes technical reports, proposals, and other materials for a range of energy-related projects. She has edited documents for clients such as PPL Electric, Wisconsin Focus on Energy, Massachusetts Program Administrators, Xcel Energy, and others.

Before joining Cadmus, Ms. Anderson has been an editor, cartographer, and graphics specialist and has worked on hundreds of documents in the disciplines of natural resources, urban planning, transportation engineering, stormwater management, and hydrography. She has produced wetland delineations, multivolume environmental impact statements, map series of changes in forest cover and alternatives for light rail designs, and large-format posters for conferences and public hearings.

Ms. Anderson has a bachelor's degree in geography from Portland State University.

M. Sami Khawaja, PhD, Senior Vice President, Cadmus

Dr. M. Sami Khawaja, a senior vice president at Cadmus, oversees the firm's Energy Services Division (formerly Quantec, LLC), which currently has a professional staff of more than 130. Dr. Khawaja has more than 25 years of economic consulting experience, and he specializes in forecasting, market transformation assessment, pricing, cost/benefit analysis, and statistical and quantitative analysis for utilities and government agencies. He is also nationally recognized as a leader in evaluation methods.

In addition to being one of the authors of the International Performance Measurement and Verification Protocol (IPMVP), Dr. Khawaja co-authored the Program Impact Evaluation Guide for the public-private collaborative National Action Plan for Energy Efficiency (NAPEE). Earlier this year, he served as the lead author on the Impact Evaluation Guide for the Electric Power Research Institute (EPRI).

An adjunct professor of economics at Portland State University, Dr. Khawaja teaches quantitative economics and statistics. He is one of the founders of the Applied Energy Economics and Policy graduate certificate program at Portland State.

Maggie Buffum, Senior Analyst, Cadmus

Maggie Buffum, a senior analyst at Cadmus, performs a variety of quantitative analyses to evaluate industrial and residential energy efficiency programs using regression and ratio estimation methodology. She uses whole-facility regression analyses to estimate savings due to strategic energy management (SEM) programs. She also supports Cadmus' effort to standardize industry best practices in this area. Ms. Buffum uses statistical software including R, SAS, and Excel to produce replicable and standardized routines that can be applied efficiently to a variety of analyses.

Ms. Buffum holds a B.S. in Economics from Oregon State University.

Mark Janett, Associate, Cadmus

Mark Janett, an associate on Cadmus' Strategic Marketing Services team, contributes expertise in market and consumer research for marketing evaluations. Mr. Janett is a dynamic researcher with a passion for applying strategic and tactical thinking to solve clients' problems. He has over four years of experience in the consumer goods industry, specifically in custom research.

Prior to joining Cadmus, Mr. Janett worked for Kantar Retail, a global management consulting firm specializing in growth strategies for the consumer goods industry, where he focused on applying a wide variety of research methodologies to client business challenges.

Masumi Izawa, Associate, Cadmus

Masumi Izawa, an associate at Cadmus, specializes in market research and process evaluation, analyzing feedback from stakeholders and end-consumers to identify actionable insights for clients. She previously assisted on two NEEA projects: 1) Evaluation Review of Key ACE Model Assumptions for Commissioning and Retrocommissioning, and 2) Research for Space and Water Heating Strategy. For both NEEA projects, Ms. Izawa provided data collection and analysis support of surveys and interviews with trade allies and industry stakeholders.

Ms. Izawa holds a B.A. in psychology from Seattle University, Washington and a M.S. in human-environment relations from Cornell University, New York.

Matei Perussi, Senior Associate, Cadmus

Matei Perussi, a senior associate at The Cadmus Group Inc., has more than 15 years of experience in statistical techniques in energy and financial analysis. Mr. Perussi provides expertise in advanced statistical methods, forecasting, billing analysis, payment analysis, advanced multivariate analyses, regression analysis, and load analysis. Additionally, he has extensive experience with DLC savings models, TOU profiling, demand-response evaluations, data modeling, and database design and development. In addition to being one of Cadmus' experts in DSM analysis, using the firm's End Use Forecast model, he has extensive experience in the use of SAS and SPSS.

Mr. Perussi participates in an ongoing forecasting project that, to date, has spanned three years. For this project at Oklahoma Gas & Electric, he provides expertise to develop probability-based peak and energy forecasting models. These forecasts address a broad range of potential weather scenarios and allow the utility to integrate its corporate forecasting with risk management efforts. In other projects, Mr. Perussi has developed statistical queries for load research data, and has created financial models to assess the feasibility of energy services projects.

Mr. Perussi holds both a BS and an MS in mathematics and statistics from Portland State University.

Matthew Gluesenkamp, Senior Analyst, Cadmus

Matt Gluesenkamp is a senior analyst with Cadmus working in the engineering department of the Energy Services Division. Matt fulfills many roles for a variety of residential and commercial energy savings programs. He has completed detailed lighting energy saving analyses for EmPOWER and PacifiCorp, performed commercial site audits for Colorado Springs Utilities, calculated savings for commercial prescriptive measures for Vectren, and developed and spread data acquisition best practices for lighting hours of use studies.

Before joining Cadmus, Matt spent over five years at GE Global Research. He conducted large-scale jet engine combustor experiments, performed energy audits for GE sites, tested thin-film photovoltaics and novel metrology devices, and used EnergyPlus software for the GE Appliances business.

Matt has an MS in Mechanical Engineering from Purdue University and a BS in Mechanical Engineering & minor in Mathematics from the Missouri University of Science and Technology.

Matthew Wisnfske, Associate, Cadmus

Matthew Wisnfske, an associate at Cadmus, has worked in energy efficiency program evaluation for more than three years. Dr. Wisnfske provides evaluation support, quantitative analysis, and as part of the Commercial Impact Analysis group. He has extensive experience in survey and sample design, net-to-gross analysis, program process evaluation, and the rapidly evolving energy efficient lighting market.

Before joining Cadmus in September 2014, Dr. Wisnfske was a Senior Analyst, focusing on energy efficiency program evaluation, at Opinion Dynamics Corporation. At that firm, he provided evaluation support to process and impact analyses for multiple clients, including PSEG-Long Island, Ameren Illinois, Commonwealth Edison, Consolidated Edison, Orange and Rockland Utilities, National Grid, Detroit Edison, and SCE&G.

Megan Ottesen, Senior Analyst, Cadmus

Megan Ottesen is a senior analyst in the Planning, Program, and Market Analysis group of Cadmus' Energy Services. Ms. Ottesen specializes in applying qualitative and quantitative analysis to inform program design and evaluations in the energy industry. She has significant experience in utility resource planning and stakeholder management. Prior to joining Cadmus, Ms. Ottesen held positions as the regulatory analyst for Indianapolis Power & Light's (IPL) Resource Planning team and as deputy director for the Indiana Office of Energy Development.

Ms. Ottesen holds an MPA from Indiana University School of Public and Environmental Affairs and a BA in Political Science from Centenary College of Louisiana.

Mike Kaar, Associate, Cadmus

Mike Kaar, a Cadmus associate, has ten years of experience in commissioning, retro-commissioning, mechanical design, and energy auditing. Mr. Kaar's expertise lies in completing detailed energy analysis of low-cost measures, capital measures, and maintenance opportunities for various building types such as offices, data centers, universities and schools, hotels, recreation centers, government buildings, retail centers, and laboratories. He has a background in HVAC and controls design and contracting. Mr. Kaar has served as mechanical consulting/design engineer on many projects across the country, in which he was responsible for completing every aspect of a project's mechanical design scope. This varied background is an invaluable asset in allowing him to effectively commission and test complex mechanical systems.

Mr. Kaar holds a bachelor's degree in Mechanical Engineering from the Georgia Institute of Technology.

Mike Kocsmiersky, Associate, Cadmus

Mike Kocsmiersky, an associate with Cadmus, performs solar quality assurance inspections for the renewable energy division. Prior to joining Cadmus, he ran his own solar energy company, performed quality assurance inspections on solar electric systems, and taught renewable energy and energy efficiency courses as a full time faculty member at Greenfield Community College. Through his 20 years in the solar industry, Mr. Kocsmiersky has managed off grid projects in remote areas of national parks and developing countries, managed his own solar business, and developed service and quality processes for solar companies.

Mike holds a BS degree in solid state physics from the University of Rochester. Mike is a certified energy manager (CEM), and has a limited electrical license in CT.

Mitt Jones, Associate, Cadmus

Cadmus associate Mitt Jones combines hands-on experience in residential energy services with established expertise in building science. He also provides extensive experience in writing, editing, and instructional design for adult learners. At Cadmus, Mitt plays a leading role in supporting field data collection for the NEEA Residential Building Stock Assessment and contributes as a proposal manager.

Before joining Cadmus, Mitt founded and ran a successful home performance business in Portland Oregon for six years, establishing it as a leader in diagnostics, work quality, and customer service. As a

business owner and a board member of the Home Performance Guild of Oregon, Mitt helped shape program policies and design and served as a technical lead and liaison with state and local programs.

Mitt holds a BS in mechanical engineering. He is a certified Building Performance Institute (BPI) Building Analyst Professional, Envelope Professional, and Heating Professional.

Myles Collins, PhD; Managing Consultant (Project Manager); Nexant

Myles Collins is a Managing consultant in in Nexant's Strategy & Planning group and has worked on a variety of projects including evaluating load impacts from demand response programs, estimating savings from behavioral conservation programs, assessing market potential for demand response and developing predictive models to improve business performance. Myles has focused on estimating customer interruption costs (CICs) for value based reliability planning and recently led a CIC study for a large Canadian utility, and worked with colleagues at Nexant and Berkeley Lab to update a guidebook for electric utilities for estimating power system interruption costs. He has also worked with Berkeley Lab and the U.S. Department of Energy to draft a cost-benefit analysis guide for investments in electricity system resilience. Prior to joining Nexant, Myles worked for five years at Southern California Edison, where he led strategy, planning and analytics projects for the Customer Service organization.

Nathan Hinkle, Senior Analyst, Cadmus

Nathan Hinkle is a senior analyst at Cadmus. Nathan has extensive experience using Excel and programming languages like Python and Matlab to process large datasets and automate computational tasks. He is leading the analysis of an advanced lighting controls study, and recently developed a program to automate downloading NOAA weather station data based on geographic proximity to client sites. Nathan is also an engineering field staff member, with particular experience metering ductless mini-split and conventional heat pumps.

Nathan joined Cadmus shortly after graduating from Oregon State University with a B.S. in Chemical Engineering. He worked in IT throughout his time in college, was president of OSU's Sustainable Energy Initiative student organization, and conducted undergraduate research in energy education. He also had two six-month engineering co-op internships; one in semiconductor manufacturing, and another in the hydrogen fuel cell industry.

Nicholas Schulz, Project Manager, Nexant

Nicholas Schulz is a Project Manager in Nexant's Utility Services business unit located in the Madison, Wisconsin office. Nicholas has more than 14 years of mechanical engineering experience, including energy analysis and design. He currently provides program assistance and technical support to Nexant's energy efficiency programs and retrocommissioning services. His breadth of responsibilities ranges from performing walkthrough energy assessments in commercial and industrial facilities, to completing energy analyses and calculations, executing retrocommissioning activities, and completing detailed technical project reviews. Prior to joining Nexant, Nicholas worked for Jacobs Engineering, where he completed HVAC engineering designs, retrocommissioning, and project management on United States Air Force bases in Korea, Japan, and Alaska. He is a Professional Engineer, a Certified Energy Manager, and a Qualified Commissioning Process Provider.

Noah Lieb, Associate, Apex Analytics

Noah Lieb has over ten years of diverse experience in the energy industry. He has managed an electric fuels forecasting service, developed long-term supply and distribution models for the electric industry, and led quantitative potentials and multiyear planning models for utilities nationally. Mr. Lieb has also served as the database manager for energy program evaluations for the States of California, Wisconsin, Maryland, Massachusetts, and Texas. He is proficient in SAS, Stata, and web-based programming, and has managed the technical development and analysis for multiple conjoint survey studies.

In addition to contributing statistical and quantitative data analysis, Mr. Lieb conducts extensive research, develops forecasting models, prepares and leads client presentations, and facilitates enterprise-wide database integration.

Before joining Apex, Mr. Lieb was a Senior Associate at the Cadmus Group (formerly Quantec LLC), where he managed large portfolio evaluations, specifically focused on database integration and management. He also led several residential lighting and appliance conjoint studies, cost effectiveness analysis, and residential lighting hours of use studies. Mr. Lieb holds a bachelor's degree in honors international economics and business, graduating *summa cum laude* from the University of Colorado.

Nora Twichell, Engineering Technician, Cadmus

Nora Twichell is a scheduler at Cadmus. Her previous employment was in a small independent primary care medical clinic where she was part of the Complex Case Management team. She also worked as an outdoor guide for several years.

Randy Mead, Senior Associate, Cadmus

Randy Mead, a senior associate with Cadmus, has more than 25 years of experience in high performance buildings, building automation systems, building analytics, and business development. He performs commissioning, energy audits and benchmarking energy performance using ENERGY STAR Portfolio Manager. He designs and implements metering analyses and prepares measurement and verification reports. Mr. Mead has performed field metering and analysis for Efficiency Vermont, NIPSCO, and Indiana Power & Light. Prior to joining Cadmus, Mr. Mead worked for Control Technologies, Inc. Most recently, he was responsible for implementation of building automation, building analytics, and energy efficiency projects for commercial, institutional, and industrial customers, overseeing an average of 180 to 200 building automation, energy, and analytics projects per year.

Mr. Mead is a Certified Energy Manager, Certified Building Commissioning Professional, Master Electrician, and Certified Measurement & Verification Professional.

Rasika Savkar, Associate, Cadmus

Rasika Savkar, an associate at Cadmus, specializes in corporate sustainability planning and reporting, evaluation of utility demand-side management programs, green building policy development, and sustainability strategies within the built environment. For over 12 years, Ms. Savkar has led projects for a variety of clients ranging from government agencies to Fortune 500 companies, lending her expertise in developing sustainability policies, tracking and quantifying sustainable criteria, authoring and demonstrating compliance with green building standards for the U.S. Green Building Council and private sector clients, conducting energy analysis, and identifying climate risks and associated mitigation

strategies. She assists team members with developing GHG inventories for a variety of clients for calculating Scope 1, 2, and 3 emissions. Additionally, she collaborates closely with cross-cutting teams to develop integrated solutions for her clients that reduce operating costs and impacts on the environment.

Robert Celustka, Senior Analyst, Cadmus

Rob Celustka, a Senior Graphic Designer with Cadmus, works with staff at all levels to prepare and create graphics (including charts, diagrams, displays, posters, web layouts, html emails, icons, logos, and a variety of marketing materials). Mr. Celustka has more than eight years of professional experience creating a wide range of digital and print materials. Additionally, he collaborates with colleagues to produce branding guidelines for the use of logos, typefaces, colors, and images. He also manages and maintains design technology requirements and budget necessities.

Rob holds a B.A. in Applied Visual Arts from Oregon State University.

Robert Huang, Senior Associate, Cadmus

Robert Huang, a Cadmus senior associate, combines a strong technical background with a broad-based public policy perspective. Mr. Huang has more than 20 years of project management experience in the environmental field. He has managed commercial and residential evaluations for the Massachusetts Energy Efficiency Program Administrators, Public Service Company of New Hampshire, Unitil, Efficiency Maine, PacifiCorp, ComEd, Ontario Power Authority, and Ameren Illinois. He has also conducted residential site audit training for a DTE Energy evaluation contractor.

In addition to his work in the evaluation field, Mr. Huang managed the Environmental Protection Agency ENERGY STAR® Low Carbon IT campaign. This unique energy-saving program provides tools and technical expertise to help organizations save up to \$50 per computer in energy costs through sophisticated network tools that place their computers into a low-power sleep mode. This program is now being expanded to offer technical advice on data center energy efficiency. He also manages the development and maintenance of ENERGY STAR product calculators.

Before joining Cadmus, Mr. Huang was involved in promoting green programs at the University of Massachusetts, serving as the University's environmental and energy technology development officer. He also worked for a number of years at Putnam, Hayes and Bartlett conducting environmental liability analysis in support of litigation.

Mr. Huang holds master and bachelor degrees in chemical engineering from Massachusetts Institute of Technology, and a master's degree in public policy from the Kennedy School of Business at Harvard University.

Robert Lamoureux, Associate, Cadmus

Robert Lamoureux, an associate with Cadmus, has more than 10 years of professional experience in energy efficiency, renewable energy, and design engineering. At Cadmus, he has been the lead field engineer installing metering equipment and analyzing demand-side management in the residential, commercial, and industrial sectors. His recent major projects include post-installation evaluations of energy-efficiency measures for Ameren UE, Avista, California Public Utilities Commission, Efficiency Maine, EmPOWER Maryland, a consortium of Massachusetts Utilities, National Grid, a consortium of

New Hampshire Utilities, NIPSCO, NYSERDA, PacifiCorp (Utah), PPL Electric, Santee Cooper, and Western Massachusetts Electric.

Before joining Cadmus, Mr. Lamoureux worked at Raytheon Company, where he performed senior design activities for digital hardware and software design for large complex projects. Among his projects was the Terminal Doppler Weather Radar program, which was a first-of-its-kind Federal Aviation Agency program to provide automatic detection of microburst and low-level wind shear conditions.

Mr. Lamoureux holds a bachelor's degree in electrical engineering from Worcester Polytechnic Institute in Massachusetts.

Robert Smith, Data Scientist (Engineer II), Nexant

Robert Smith is a Data Scientist with several years of experience working with municipal and investor-owned utilities applying advanced statistics and machine learning to smart-grid and customer segmentation opportunities. In addition to executing advanced analytics, Robert is also a guiding voice in data science best practices and creation of sound organizational data science strategies. Prior to joining Nexant, he was a Senior Business Intelligence Analyst at Xcel Energy where he provided advice on developing a robust end-to-end data science pipeline, and executed big data use-cases leveraging Hadoop and Spark to demonstrate the value of advanced analytics.

Romi Jones, Engineering Technician, Cadmus

Romi Jones, a scheduler with Cadmus, provides support to field staff on energy-efficiency projects through evaluation, recruitment, and scheduling of participant sites. Before joining Cadmus, Romi worked at Sensible Energy Solutions, a home performance business in Portland, Oregon. Romi received a bachelor's degree in Mathematics from Cornell University's College of Arts and Sciences.

Ron Shaw, Managing Consultant (Project Manager), Nexant

Ron Shaw is a Managing Consultant for Nexant's Strategy & Planning (S&P) group located in the Louisville, CO office. With over 15 years of conservation program and project management experience, Ron develops and implements impact evaluation plans, quantifying verified energy and demand savings with statistical sampling models. Since 2012, Ron has managed Nexant's annual impact evaluations of Ontario's residential and commercial programs. Ron earned a degree in Chemical Engineering from the University of Colorado and is a Certified Energy Manager.

Ryan Hughes, Senior Associate, Cadmus

Ryan Hughes, a senior associate at Cadmus, has over 10 years of experience working in the energy efficiency industry, most recently with Eaton as the energy team leader for their Boulder office. Mr. Hughes' past responsibilities have included retro-commissioning, energy audits, commissioning, measurement and verification (M&V), LEED project management, energy modeling, and HVAC&R design. With such a wide background in various roles within the built environment, Mr. Hughes has a unique understanding of the strengths and limitations of designing, constructing, and maintaining commercial facilities. Over the past five years, Mr. Hughes has primarily focused on existing buildings, serving as the project manager and technical lead for the retro-commissioning and implementation of over 50 buildings in the Rocky Mountain region.

Mr. Hughes holds a bachelor's degree in mechanical engineering from University of Colorado, Boulder.

Sarah Budinger, Associate, Cadmus

Sarah Budinger, an associate at Cadmus, applies her background in engineering and architecture to evaluate and analyze high-performance building systems. Ms. Budinger's experience encompasses analyzing renewable energy potential, energy use of building portfolios, and zero-net energy buildings. She also conducts energy audits.

Before joining Cadmus, Ms. Budinger developed recommendations for the Boulder County Land Use Department to assist in rebuilding homes lost to the Fourmile Canyon Fire. She focused on exceeding the Boulder County building code requirements and achieving net zero energy buildings. Ms. Budinger performed this analysis primarily using BEopt modeling software.

Ms. Budinger has a master's degree in civil engineering from University of Colorado, Boulder.

Scott Davis, Associate, Cadmus

Scott Davis is an associate in the Impact Measurement group at Cadmus with a multidisciplinary background in engineering. Mr. Davis has worked in the energy industry since 2007, providing technical, analytical, and leadership skills to a variety of energy-related projects. He worked closely on one of the firm's largest projects for a major West Coast utility commission. In addition to managing large datasets, Mr. Davis performs demand response and unit energy savings analysis for utilities. He has also performed cost-benefit testing at the measure, program, and portfolio level for a number of small and large clients.

Before joining Cadmus in 2009, Mr. Davis was a consultant at Ventyx and a member of their advisory group. He focused on fuel availability and pricing with a basis in fundamental fuel supply and electricity demand. There, he developed models and analytical software used by utilities and fuel suppliers for short- and long-term reliability planning.

Mr. Davis holds bachelor degrees in environmental engineering and in chemical engineering from the University of Colorado. He completed his Engineer-in-Training Certification.

Scott Dimetrosky, President, Apex Analytics

Mr. Scott Dimetrosky, MBA, has led planning and evaluation studies for dozens of utility energy-efficiency, load management, and market transformation programs. His projects, spanning over 20 years, have addressed all market sectors—large and small commercial, industrial, agricultural, residential, and low income. Mr. Dimetrosky is currently providing technical and analytical oversight for portfolio evaluations in Arkansas, Connecticut, Illinois, Massachusetts, Missouri, and Pennsylvania. Mr. Dimetrosky is a nationally recognized expert in residential lighting programs, serving as the lead author for the Department of Energy Uniform Methods Project (UMP) Residential Lighting Evaluation Protocols.

Prior to forming Apex Analytics, Mr. Dimetrosky was a founding member and principal at Quantec, LLC, which merged with the Cadmus Group in 2008. During his 13 years at Quantec and Cadmus, Mr. Dimetrosky led some of the largest evaluations in the United States. Mr. Dimetrosky has delivered papers at over 20 energy efficiency conferences, and taught principles of Demand-Side Management (DSM) and DSM evaluation courses.

Mr. Dimetrosky is on the Planning Committee for the International Energy Program Evaluation Conference (IEPEC) and a board member of the Rocky Mountain Chapter of the Association of Energy Service Professionals (AESP). He has an M.B.A. in Marketing Research & Quantitative Methods from Cornell University and a B.A. (*Magna Cum Laude*) in Sociology from the University of Michigan.

Scott Reeves, Senior Associate, Cadmus

Scott Reeves, a senior associate with Cadmus, provides expertise in quantitative and qualitative evaluation of energy-efficiency programs, with a particular emphasis on low-income programs and whole-house weatherization. He has led a number of low-income evaluations where he performs billing analyses, non-energy benefit assessments, cost-effectiveness analysis, and survey design. Having managed or participated in more than 23 low-income program evaluations across North America, Mr. Reeves is one of Cadmus' experts in this area.

Before joining Cadmus, Mr. Reeves worked with the Indiana State government to improve statewide demand-side management (DSM) data collection efforts and enhance the structure for organizing and delivering energy programs. He also worked with the state to develop policy recommendations for improving the weatherization program. His work focused on improving targeting methodologies for identifying program participants, as well as enhancing the program delivery systems.

Sepideh Shahinfard, Associate II, Cadmus

Sepideh Shahinfard, a Cadmus associate has over 10 years of experience in designing, implementing and evaluating energy efficiency and demand response projects. Ms. Shahinfard has implemented, and evaluated energy efficiency projects for PSE&G, O&R, CPUC, PG&E, SCE, SCG, SMUD, City of Palo Alto Utilities, Silicon Valley Power, and San Francisco Department of Environment. Her areas of expertise include baseline studies and end use analysis, impact evaluations, emerging technology evaluation, metering and data collection, technical reviews, workpaper development, code compliance and measure eligibility reviews, as well as deemed savings and Technical Reference Manual (TRM) reviews.

Ms. Shahinfard is a member of California Technical Forum (Cal TF). As a member of the TF, she has participated in collaborative peer review of energy efficiency savings estimates and other technical information related to California's integrated demand-side management portfolio.

Shannon Donohue, Associate, Cadmus

Shannon Donohue performs data collection and analysis for evaluating energy-efficiency programs. Mr. Donohue has extensive experience working with HVAC systems and building mechanical systems. During a recent evaluation for a major West Coast public utilities commission, he wrote the program for the Package Terminal Air Conditioner analysis tool. Mr. Donohue is a RESNET certified HERS rater and an expert in residential energy modeling, utilizing software packages including TREAT, REM-Rate, Energy-10, and Energy+. He has performed residential energy evaluations nationally, including evaluation planning, data collection, metering, and analysis.

Before joining Cadmus in 2009, Mr. Donohue designed and implemented high-efficiency hydronic heating systems with Montana Radiant Technologies. He also has extensive experience in residential

home and high-rise construction through working for Schlauch-Bottcher Construction, the RMR Group, and Yorke & Curtis Inc.

Mr. Donohue holds a bachelor's degree in mechanical engineering from Montana State University, and has earned an Engineer-in-Training certificate.

Shannon Greene, Analyst, Cadmus

Shannon Greene is an analyst in the Statistical and Economic Analysis team at Cadmus. She performs data collection, cleaning, and analysis for impact evaluations of industrial, commercial, and residential energy efficiency programs. Ms. Greene's areas of expertise include performing regression analysis for Strategic Energy Management (SEM) and behavior based program evaluations to estimate program energy savings. She has also assisted with sample design by summarizing available data to provide an overview of the population, mapping population sizes to geographical regions, and implementing probability proportional to size sampling.

Before beginning at Cadmus in 2015, Ms. Greene attended the University of Oregon where she earned a Bachelor of Science degree, majoring in economics and mathematics and minoring in theatre arts with a concentration in stage management.

Stephen Tobey, Associate, Cadmus

Stephen Tobey, an associate, specializes in solar and renewable project advising and is an experienced financial modeler and solar project expert. Mr. Tobey analyzes operational, industry and financial data to inform and advise sponsors and capital providers on their investment decisions. Before joining Cadmus, Mr. Tobey was a senior consultant at Hatch where he advised banks and project stakeholders on market opportunities, solar projects, and built Access and SharePoint databases. Mr. Tobey has advanced modeling skills which he can deploy to analyze operational, industry and financial data and advise clients on corporate and project finance solutions.

Steve Cofer, Principal, Cadmus

Steve Cofer, a principal, leads a team of eight evaluators and engineers at Cadmus. He combines a range of impact evaluation proficiency, program implementation, and large portfolio and project management experience. For example, his work with Michigan's showerhead and faucet aerator metering project relied on his ability to successfully meter over 150 individual homes water usage across the state. This project was the first of its kind and required his ability to effectively plan all aspects of this project from metering, analysis, and field logistics. Mr. Cofer has more than 13 years of applied experience with energy-efficiency program evaluation, design, and implementation.

Before joining Cadmus in 2009, Mr. Cofer was employed by Portland Energy Conservation Inc. (PECI), where he oversaw Bonneville Power Administration's EnergySmart Grocer program. Before managing that program, Mr. Cofer led a team of contractors to upgrade PECI's GrocerSmart auditing and modeling software. Mr. Cofer has collaborated in multiple-program launches for large California investor-owned utilities.

Mr. Cofer has authored multiple papers and presented at recognized conferences. Topics have ranged from residential HVAC to field metering best practices.

Steve Patterson, Technical Editor, Cadmus

Steve Patterson, a senior technical editor for Cadmus, has more than 30 years of professional writing and editing experience. For Cadmus' Energy Services Division, Mr. Patterson aids authors—working in a wide range of disciplines, and with differing backgrounds and experience levels—in producing high-quality, clear, effective documents for technical and lay audiences. Mr. Patterson's well-honed writing and editing skills enable him to enhance a document's structure, flow, word choice, and grammar while retaining the author's voice and meaning.

For over 20 years, Mr. Patterson has served as a technical editor for environmental and energy consulting firms. He has also worked as a book editor, journalist, and advertising copywriter

Taylor Bettine, Senior Analyst, Cadmus

Taylor Bettine, a senior analyst at Cadmus, contributes to DSM potential studies and provides analyst support on evaluations. He brings a strong educational background in analytical thinking, engineering tools, and mechanical engineering theory. Mr. Bettine's studies emphasized a project-oriented engineering curriculum in which he applied a variety of computational and analytical tools such as Excel and basic programming knowledge.

Prior to working at Cadmus, Mr. Bettine was a research assistant at the National Renewable Energy Laboratory. He created an Excel model that took into account a variety of variables to calculate heat transfer and particle flow characteristics of a given experimental setup using mechanical engineering theory to determine the appropriate formulae.

Mr. Bettine holds a B.S. in Mechanical Engineering from the Colorado School of Mines.

Taylor La Prairie, Research Analyst, Cadmus

Since joining Cadmus as an intern in 2018, Taylor La Prairie has worked with the Statistics and Economics team in the Cadmus Energy Services division on analyses and data visualizations for strategic energy management, behavioral, and air conditioning cycling programs. Mr. La Prairie works primarily in R and SAS.

Mr. La Prairie graduated from Reed College in 2018 with a B.A. in economics.

Terry Fry, Senior Vice President, Cadmus

Terry Fry, senior vice president and director of Energy Services at Cadmus, has led economically efficient energy production and technology deployment initiatives for more than 30 years, and for the last 20 years has worked with governmental and non-governmental entities on energy industry policies and regulations that encourage energy efficiency and renewable energy. He has particular depth in utility resource planning and regulatory practices, focusing on the intersection of customer initiatives, distributed energy resources, and modern grid dynamics.

Before joining Cadmus, Mr. Fry was senior vice president at Nexant, where he directed the utility services division in delivering turnkey energy efficiency initiatives and providing solutions in grid modernization, dynamic pricing strategy, demand-side planning and evaluation, and integrated distributed energy resources planning. His career includes management consulting positions focused on demand-side

strategy, policy, and institutional capacity building (at Bechtel Technology and Consulting and Barakat & Chamberlin).

Mr. Fry recently completed his fourth term as an appointed Advisor on renewable energy and energy efficiency to the U.S. Commerce Secretary, for whom he provided guidance on clean energy manufacturing, export, and job creation initiatives. He serves as Board Chairman of the California Efficiency and Demand Management Council, a business organization that supports energy efficiency and demand response industry firms. He was named by Smart Grid Today as one of its Smart Grid Pioneers, recognizing the top 50 energy leaders who are pioneering changes in the industry.

Thomas Davies, Analyst, Cadmus

Tom Davies, an analyst at Cadmus, has experience with HVAC, power, and light metering projects. He works in the field and in the energy lab at Cadmus' Waltham office, where he helps manage metering equipment.

Before joining Cadmus, Mr. Davies was an intern at GE Aviation, working on the turbo-shaft project product support team. After interning at GE, he completed three co-op rotations at Electrolux Home Products-Refrigeration, where he worked on the sealed systems team. His main responsibilities were assisting with launching engineering changes into production and improving energy efficiency across all platforms to comply with 2014 standards.

Mr. Davies holds a BS in Mechanical Engineering from Clemson University.

Torsten Kieper, Senior Analyst, Cadmus

Torsten Kieper provides support for an array of Cadmus' Energy Services Sector projects, including energy efficiency potential modeling demand elasticity modeling, and demand-side management. His areas of expertise include non-market valuation, economic impact analysis, econometrics, and cost-benefit analysis.

Prior to Cadmus, Torsten worked for Pacific Gas and Electric Co. as a financial analyst and as a research assistant at Colorado State University, where he conducted economic impact analysis and non-market valuation for the Department of Forest and Rangeland Stewardship.

Torsten holds a B.A. in Economics from Willamette University and a M.S. in Natural Resource and Environmental Economics from Colorado State University.

Tyler Hammer, Senior Associate, Cadmus

Tyler Hammer, a Cadmus senior associate, has more than 10 years of project management experience in the energy industry with potential and baseline studies, program planning, and software deployment. Tyler has a successful track record of managing studies for utilities and state agencies from potential and baseline studies, to program planning, and software deployment. He offers more than ten years of project management experience in the energy industry, helping utilities and state agencies strategically plan and allocate more than \$5 billion dollars towards cost-effective demand side management (DSM) programs. In addition, he serves as the President of the Board for the Rocky Mountain chapter of the Association of Energy Services Professionals (AESP) helping to make it the premier AESP chapter in the country.

Before joining Cadmus, Mr. Hammer was a managing consultant in Nexant's Strategy & Planning group where he helped utilities and state agencies strategically plan and allocate more than \$5 billion toward cost-effective demand-side management (DSM) programs.

William Warren-Hicks, Principal Cadmus

Dr. William Warren-Hicks is a principal statistician at Cadmus. He specializes in the statistical analysis of energy market data, and design of studies for identifying retailer and public behavior in response to utility energy savings programs, including evaluating markets for targeted products.

Dr. Warren-Hicks has over 130 peer-reviewed publications, two books, and eight book chapters in the areas of statistics, probabilistic modeling, decision sciences, and risk assessment. He has taught statistics to undergraduate, graduate, and professional students at Duke University, Elon University, and professionals in the U.S., Europe, and Australia. He is considered an expert in the use of Bayesian methods in decision sciences.

Dr. Warren-Hicks holds a Ph.D. in Environmental Statistics from Duke University.